The Magazine For Hewlett-Packard Enterprise Computing

HP Professional

MARCH 1995

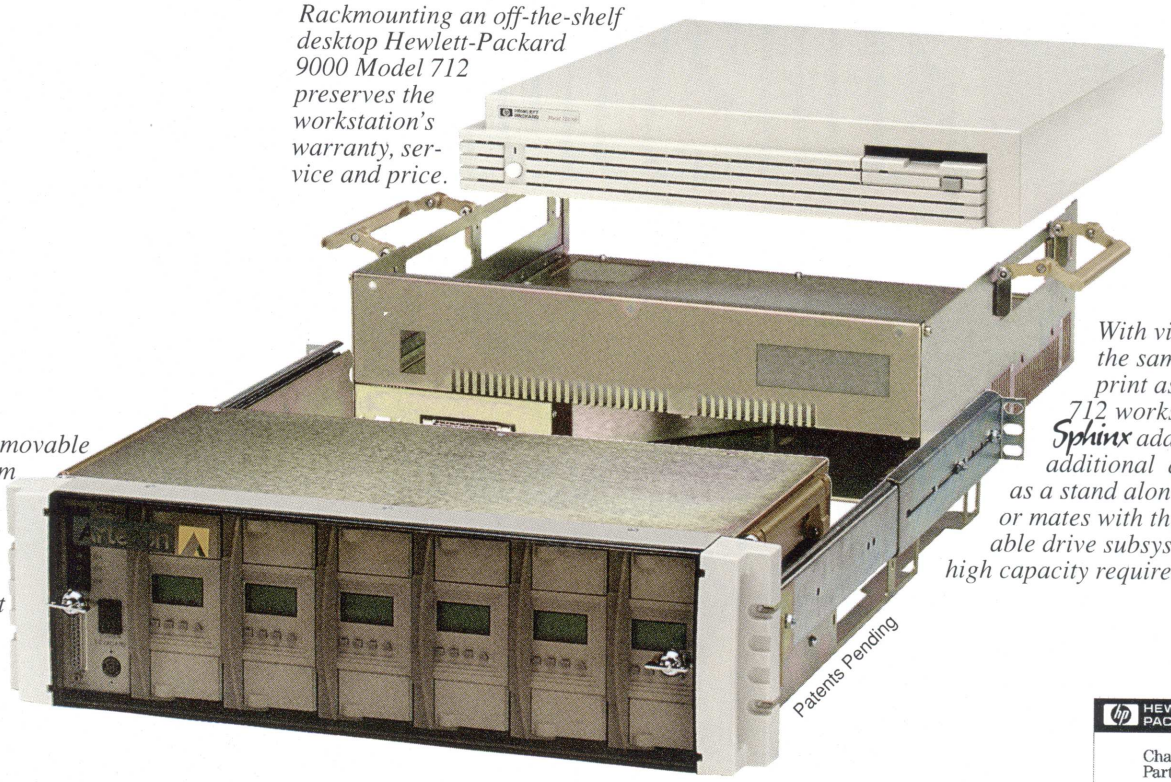
WHAT HATH HP-UX 10 WROUGHT?
Part One Of A Hands-On Report
Page 32

UNIX Forges Ahead

PC X Servers Spark New Interest For Integration

Rack & Roll.

Rackmounting an off-the-shelf desktop Hewlett-Packard 9000 Model 712 preserves the workstation's warranty, service and price.



An optional removable drive subsystem lets you add 6 additional 3.5" devices, including up to 25GB of hot plug disk.

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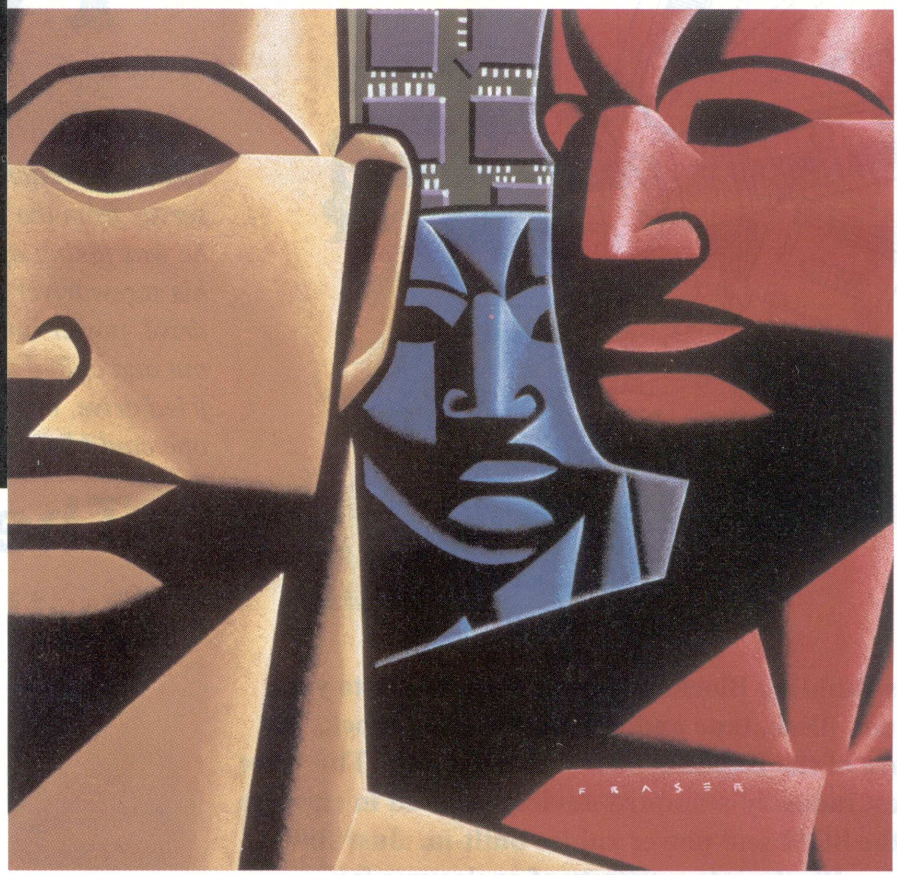

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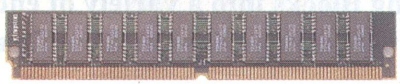
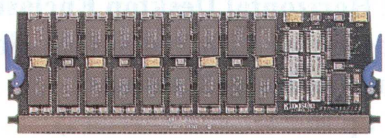


DEC ALPHA 3000AXP Memory
32MB, 64MB, 128MB, 256MB



HP/Apollo Series 9000 Model 750, 755 Memory
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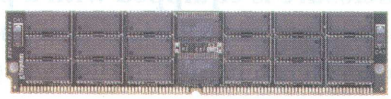
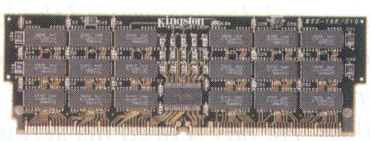


Challenge™ & Onyx™ Memory
64MB, 256MB



SPARC System 10 Memory
16MB, 64MB

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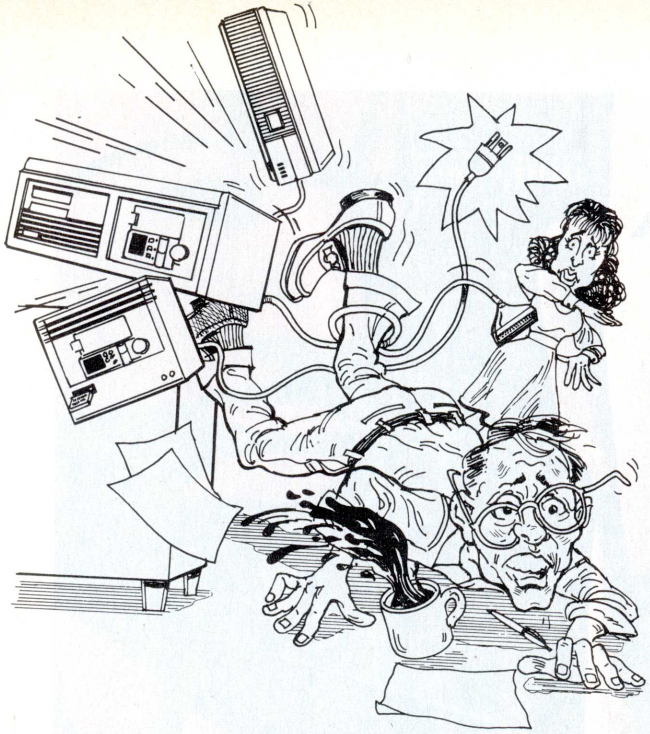

It was UGLY.

Joe bit it when he tripped over a mess of SCSI and power cables (12 stitches). Two days ago, he disconnected the server from the network (4 hours downtime). Last week, he was taking apart a tape drive he thought was bad when his screwdriver slipped and hit the power supply (fried drive, power out for two hours). Stacy tried to help him out and called the vendor to get a replacement for the fried drive, only to find out it would be two days before one could be shipped (2 days without backup).

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IEM's Building Blocks are a simple solution to your problem. Disk, tape and optical Building Blocks are the core of the Building Block product line. These are the best industry-standard devices encased in carriers with the SCSI and power cables built-in. Just slide Building Blocks into a variety of enclosures for unlimited combinations and configuration flexibility.

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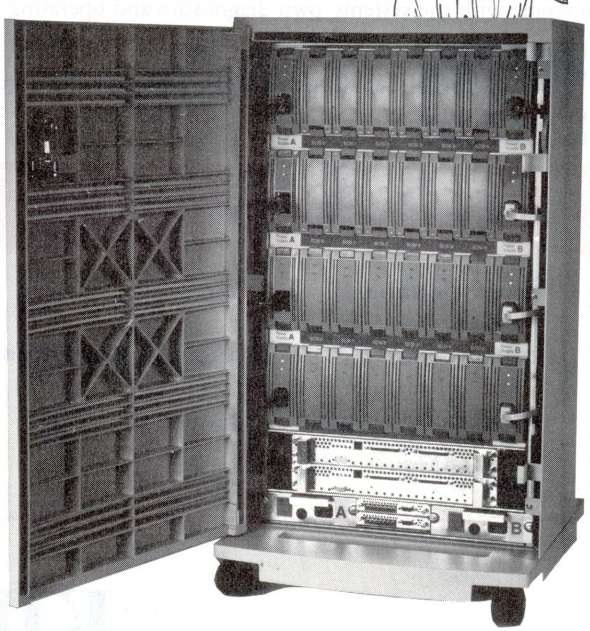
Since there are no loose cables to trip over, Joe listens to his Walkman and dances around the lab freely with no fear of stitches or disconnecting the network. If a device goes down, Joe just slides it out of its slot and replaces it with another. He has retired his screwdrivers to the toolbox -- far away from the lab.



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3. . . 2 . . . 1 . . . Liftoff. With the end of the HP-UX countdown, HP Professional's *UNIX space cadet tracks Version 10's trajectory. Will it be able to achieve and maintain an enterprise orbit? Find out in the first of this three-part series.*

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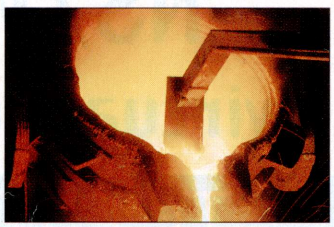

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HP PROFESSIONAL ISSN 0896-145X is published monthly by Cardinal Business Media Inc., 1300 Virginia Dr., Ste. 400, Fort Washington, PA, 19034. Subscriptions are complimentary for qualified U.S. and Canadian sites. For reprints, contact Reprint Management Services, 505 E. Airport Rd., Lancaster, PA 17601; (717) 560-2001, Fax (717) 560-2063. Second Class postage paid at Fort Washington, PA 19034, and additional mailing offices. POSTMASTER: Send all correspondence and address changes to HP PROFESSIONAL P.O. Box 3052, Northbrook, IL 60062.

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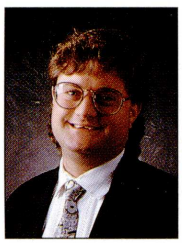

By Charlie Simpson

In a recent *HP Professional* survey, 4 out of 5 dentists recommended the HP 3000 for whiter teeth and fresher breath. Unfortunately, only 6 percent of those surveyed were considering an MPE/iX solution as a future purchase.

So what are you buying or planning on buying these days? Well, 17 percent plan on getting HP 9000 Series 800 servers and 14 percent like the Series 700 workstation, while 25 percent of those surveyed plan to install Intel-based PC LANs.

Fifty-three percent of our surveyed readers plan to add HP equipment to their already existing network. The two reasons for migrating from HP 3000s to other systems, namely UNIX, were better performance and more networking flexibility. At the other end of the spectrum, one straight-to-the-chase, die-hard replied "Stupidity."

Could the advent of HP-UX Version 10 be why users are hesitating to commit to non-UNIX solutions? Will HP-UX Version 10 be the second coming of UNIX that zealots are still awaiting?

HP press releases promise application investment protection, scalability and cost performance — blah, blah, blah. Let's hope there's something else that is truly new with this release. I understand that these are on-going concerns, but can't they find some new words. I think it's safe to assume these issues will be addressed. I couldn't imagine a PR flak stating: "Total loss of investment," "286-class performance," "Limited scalability, worst-in-class solution" and overall a "weak and difficult to use system."

If you recall, we expected HP Version 10 as early as summer 1993. There have been several explanations for the delay — from changing standards to rumors of internal turf wars. Maybe HP just wanted to put out a product that works. Wouldn't that be a novel idea?

Whatever the reasons for the delays, it no longer matters because HP-UX V10 is here and there are a heap o-changes. Because of those changes, *HP Professional* has assigned Fred Mallett, our UNIX hit man, to take out HP-UX. This is no easy task. In fact, Fred's assignment is a year-long investigation of version 10 through a three-part series of articles. Part one, appearing this month, provides a hands-on tour of some of the changes you'll encounter from HP-UX 9.x to HP-UX V10. The second part, appearing in July, will explore the HP-UX file system. And finally, the third part, appearing in November, will cover sam, networks and DCE.

In addition to Fred's assignment, next month we are premiering our own much awaited release of *HP Professional's* Open Systems Focus section. Our April Open Systems Focus will explore options that allow you to move your HP 3000 into the outside world of "open systems," as well as HP 3000-to-UNIX migration issues. Future sections will target the HP 9000, operating systems and the internetworking of multiplatform software.

For despite its overuse, misuse, overkill and inundation, Open Systems is still a phrase vendors want to be associated with. With our new focus, we'll help you decide if you and your company want to be associated with Open Systems as well.

Charlie Simpson

simpson@cardinal.com

E-mail Alternatives

I read with interest George A. Thompson's article "Make The Right Connections With E-mail" [August 1994 issue]. While it is indeed true that OpenMail is the solution that HP will promote in the great majority of new business situations, I was disappointed to note that you made no reference to the positioning or even existence of HP OpenDesk.

It is arguably fair to have included HPDesk along with other legacy E-mail solutions like PROFS and ALL-IN-ONE. With its proprietary directory structure and limited choice of client support, HPDesk is typical of this generation of product.

However, HP has built a considerable installed base of HPDesk customers, with about 13 percent of all HP 3000 customers worldwide. These customers typically value their HP 3000 investment, and HP is committed to giving them a choice of newer generation solutions that includes E-mail.

The new OpenDesk is radically different from its predecessor. By incorporating exactly the same UAL code that HP uses for OpenMail, we have managed to provide the same "clients of choice" versatility across both products. The initial release of OpenDesk, available since early last year, supports the latest cc:Mail, Microsoft Mail and Schedule products at the same VIM and MAPI support level as OpenMail. The next release, due out in a few months, will add all the remaining UAL options currently supported by OpenMail. In fact, every client product referenced in the article could become viable for use with OpenDesk.

This is not intended to create rivalry with OpenMail. We position OpenDesk as the logical upgrade for existing HPDesk customers or other HP 3000 customers who want to benefit from E-mail while preserving their server investment. We have many examples of customers who are achieving exactly the same advantages through the use of OpenDesk or OpenMail as their corporate messaging backbone. Although I do not expect to see the proprietary directory structure of OpenDesk replaced by a native X.400/X.500 implementation like that of OpenMail, there are planned investments that will further aid directory synchronization and system management, so that customers can more easily build their future backbones around the combined use of OpenDesk and OpenMail on whatever servers are most appropriate to their needs.

Because of the synergy between the two products, you will see that we are able to leverage the outbound messages heavily from OpenDesk to OpenMail and vice versa.

Andrew P. Butler
Marketing Program Manager
Hewlett-Packard
CSO European Marketing Center

Your points regarding HP's OpenMail and OpenDesk products are well-taken. We have no doubt that HP OpenDesk can indeed be beneficial to HP 3000 customers. However, as you mentioned, only 13 percent of the HP 3000 installed base are using OpenDesk. As you can see from the next letter, OpenMail is well-regarded as an enterprise E-mail solution. Yet OpenMail remains a curiously undermarketed product, so we chose to devote our efforts solely on OpenMail. We will be revisiting client-server E-mail options again this October. — GAT

I am writing this E-mail note out of frustration with HP's "strategic alliance" with Lotus. HP OpenMail was a huge step in the right direction in providing a client-server enterprise-wide messaging backbone. It was built around open protocols such as X.400, X.500 and SMTP. The concept of a client-server system provided for multiple client interfaces. HP had an 18-month advantage over other companies, but they missed the boat by not expanding on a solid product.

I was evaluating HP OpenMail to replace our current cc:Mail E-mail system with a SMTP gateway (which lacks MIME support). HP OpenMail *would* have been a clean messaging backbone with no gateways to talk to the Internet. Users could have maintained the cc:Mail interface while we moved to a scalable and open E-mail solution.

I guess it is true that HP provides great hardware, but software is another story. I wonder how the million or so current HP OpenMail users feel about HP's "strategic alliance." I am very happy that this happened before we began implementing a dead-end product.

Ed F. Lair, Jr.
Senior Technical Specialist
Maden Tech Consulting

You're not alone in your concerns about the Lotus and HP strategic alliance. HP's intention, however, is to provide its customers with a product in the groupware space. At the moment, Lotus Notes seems like a logical choice. As you letter makes clear, HP has nothing to gain by abandoning OpenMail. — CS

ON RAMPS IN USE

Tim Cahoon's column "Back-Alley On Ramps" [January 1995] issue prompted me to write about our experience in Texas. There's a saying that if you build a highway, people will drive on it. Texas has adapted this idea to information technology and found that if you build an information infrastructure, people will use it.

According to the Texas Department of Commerce, TEXAS-ONE, a State of Texas lead proposal, has been awarded $2.5 million in the Federal Technology Reinvestment Project competition. More than 2,800 proposals, requesting a total of $8.5 billion, were submitted from teams of companies, universities, and state and local governments nationwide.

The Texas Open Network Enterprise (TEXAS-ONE) will serve small- and medium-sized manufacturers in Texas by providing an electronic information network previously accessed only by large corporations able to afford an infrastructure investment. TEXAS-ONE is a partnership led by the Texas Department of Commerce, the Microelectronics and Computer Technology Corp., the Texas Department of Information Resources, the Texas Innovation Network System, NASA's Mid-Continent Technology Transfer Center and the University of Texas at El Paso.

TEXAS-ONE is a model of what can and needs to be accomplished as we grapple with the design and implementation of a national information superhighway.

Jimmy A. Castro
Member
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HP Professional welcomes comments from its readers. Letters may be edited for brevity and clarity, and should be addressed to: HP Professional, 1300 Virginia Dr., Ste. 400, Fort Washington, PA 19034. Fax number: (215) 643-4827. Internet address for staff listed on the masthead: LASTNAME @ CARDINAL. COM
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INDUSTRY WATCH

George A. Thompson

SAS CAUSES FLAP OVER OLAP

Data warehousing, OLAP. Data warehousing, OLAP. Data warehousing, OLAP. Are you having trouble deciding how to store and retrieve all that data you've been gathering all these years? Maybe the OLAP Council can help. Then again, maybe not.

Established at the beginning of the year, the OLAP Council is an advocacy group formed to provide information about and help position OLAP within IT architectures. However, until the concept of a data warehouse became feasible, OLAP was primarily associated with multidimensional database (MDD) technology. In fact, the founding members of the OLAP Council all offer multidimensional technology products: Arbor Software (Sunnyvale, Calif.), Comshare Inc. (Ann Arbor, Mich.), IRI Software (Waltham, Mass.) and Pilot Software (Boston, Mass.).

At least one non-MDD vendor — SAS Institute (Cary, N.C.) — was asked to become a Council member. But SAS caused a stir when it issued a press release withdrawing from the Council "because of the sponsoring vendors' requirement that proprietary multidimensional databases be positioned as the principal enabling technology." SAS was included in early negotiations, confirms Richard Crandall, Comshare's CEO and spokesperson for the OLAP Council. "We reached out to them, but they purposely misrepresented our position."

Still, John McIntyre, program manager for business intelligence at SAS, says "if our claims are incorrect, why aren't there any vendors who do not support MDD technology on the Council. The burden of proof is on them." Kenan Technologies (Cambridge, Mass.), another OLAP vendor also participated in the initial discussions, but decided not to join the Council because "we thought their goals would be better supported by an independent third party," says Eric Schnadig, marketing specialist for Kenan. But the misunderstanding seems to lie more with concepts than technology.

For SAS' McIntyre, "there are other ways to do multidimensional analysis without going to another database technology. When you go into an operating room to perform surgery, you need more than just a scalpel." Kenan's Schnadig says, "Data warehousing is a process, not a product." But Crandall says the MDD-only claim isn't true. "We don't care if you stage the data live [from an MDD] or from a RDBMS." For now, both SAS and Kenan are keeping their options open and may opt to join the Council at a later date.

Besides its educational goals, the OLAP Council, like other such standard bodies, also hopes to agree on a common API. Frank Teti, senior consultant at KPMG Peat Marwick (Radnor, Pa.) says a common API will be good for developers. "You can then use any GUI with any MDD. And it might help push the SQL world in a more friendly direction." SQL, the so-called linga franca in the RDBMS world, has yet to be optimized for decision support functions. Nevertheless, Teti thinks that there is room for data warehousing and MDD technologies. "They can coexist." ●

NOTABLE QUOTABLES

"Maybe we should have a tax credit for the poorest Americans to buy a laptop."

— Speaker of the House, Newt Gingrich, at the unveiling of Thomas, an Internet repository for legislative information.

THE SHIP'S COME IN

In January, HP's Federal Computer Division sailed past IBM and DEC by winning a bid to become the prime

RESEARCH ROUNDUP

BETTER TO BURN OUT ...

Maybe. But if you're a systems integrator (SI), you may get toasted unless you can adopt a new business model. At least, that's the advice given to SIs by research firm Summit Strategies (Boston, Mass.). "The SI business has changed significantly," says John Daly, Summit's associate service director and author of a report entitled "The Systems Integration Industry in Transition: A Guide to the New Business Model."

Specifically, technology is no longer the answer. Businesses want "a quantifiable improvement," says Daly. That means hard numbers, not the soft sell. In other words, the focus will be on return on investment (ROI) and cost/benefit analysis and not on the one best technology. Therefore, Daly advises SIs, as well as VARs and ISVs, to move toward a custom-fit, mass-produced solution.

According to the report, "those integrators which continue to position themselves on the basis of their technical prowess — such as Martin Marietta's claim of object-oriented leadership — will experience an increasingly unreceptive market."

contractor under the U.S. Navy's Tactical Advanced Computer (TAC-4) program. HP subcontractors include Harris Corp. (Melbourne, Fla.) and SAIC Corp. (San Diego, Calif.). SAIC will provide systems integration services, equipment ruggedization, portable computing technology and system engineering services. Harris will provide imaging, security and networking expertise.

TAC-4 is the largest contract to consolidate purchases of off-the-shelf products for shipboard and office workstations for the Marine Corps, Navy and Coast Guard. Workstations supplied by Harris will include Parallax Graphics' PowerVideo 700 graphics card. According to Lee Caswell, director of marketing for Parallax, the two primary applications include frame grabbing and video conferencing, in combination with InSoft's Communique video conferencing product.

PowerVideo 700 includes two simultaneous inputs for real-time monitoring and on-board video compression. PowerVideo 700 supercedes an HP video product called the LiveBoard in an earlier version of the contract. The TAC-4 contract, estimated at a value of $672.6 million, will involve the purchase of 23,000 workstations and servers over the next six years. ●

THE DEATH OF DOS-BASED SALESMEN

With Business Process Re-engineering (BPR) all the rage, corporate sales forces are coming under more scrutiny. And if you've automated your sales force in the past several years, it's time to upgrade. So says *Beyond the Blue Sky: A Realistic Look at Sales Automation*, a 370-page report from Culpepper and Associates Inc. (Atlanta, Ga.).

"We found considerable disenchantment among current sales force automation systems (SFA) users. More than 60 percent of the survey's respondents plan to change from their currently installed SFA software package," says Ginger Kernachan, project director. Users are

Daly sees a significant market opportunity for companies with the required scale and technical know-how to provide full management and support for client-server networks. Daly mentions HP's Selective Outsourcing Division and SHL Systemhouse as two such organizations; both are growing in excess of 40 percent a year.

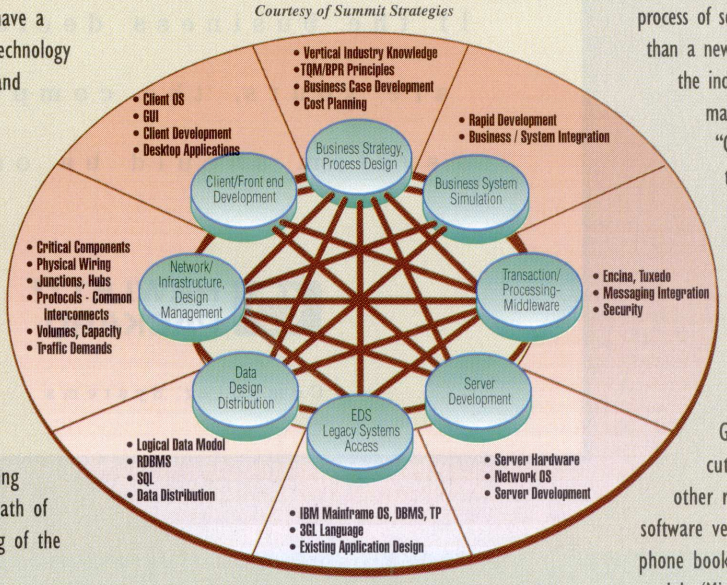
Finally, vendors take note: you'll have a better chance of becoming a trusted technology partner with an SI if you continually and objectively educate integrators in technology directions.

... THAN FADE AWAY

While some SIs may indeed be on their way to burning out, the days when software was a technology-driven industry is fading away. That was the observation of Jeffrey Tarter, editor and publisher of the Soft•letter, a newsletter for software executives. Tarter made the observation while giving a presentation grimly entitled "The Death of Technology" during the annual meeting of the Massachusetts Software Council (MSC).

When Tarter asked his subscribers to list their strategic concerns, he found that Microsoft Windows, Windows and ... Windows were at the top. Hence, Tarter concludes that "Microsoft is the only significant platform left. Non-Microsoft technologies like PowerPC and OS/2 dropped to the bottom of the list," he says. "In fact, many companies are betting the company on Windows," citing DEC's Alpha/Windows NT combination as an example. Consequently, for better or worse, Tarter feels that "Microsoft now owns the technology agenda. So Microsoft apps define the interface, connectivity and interoperability rules."

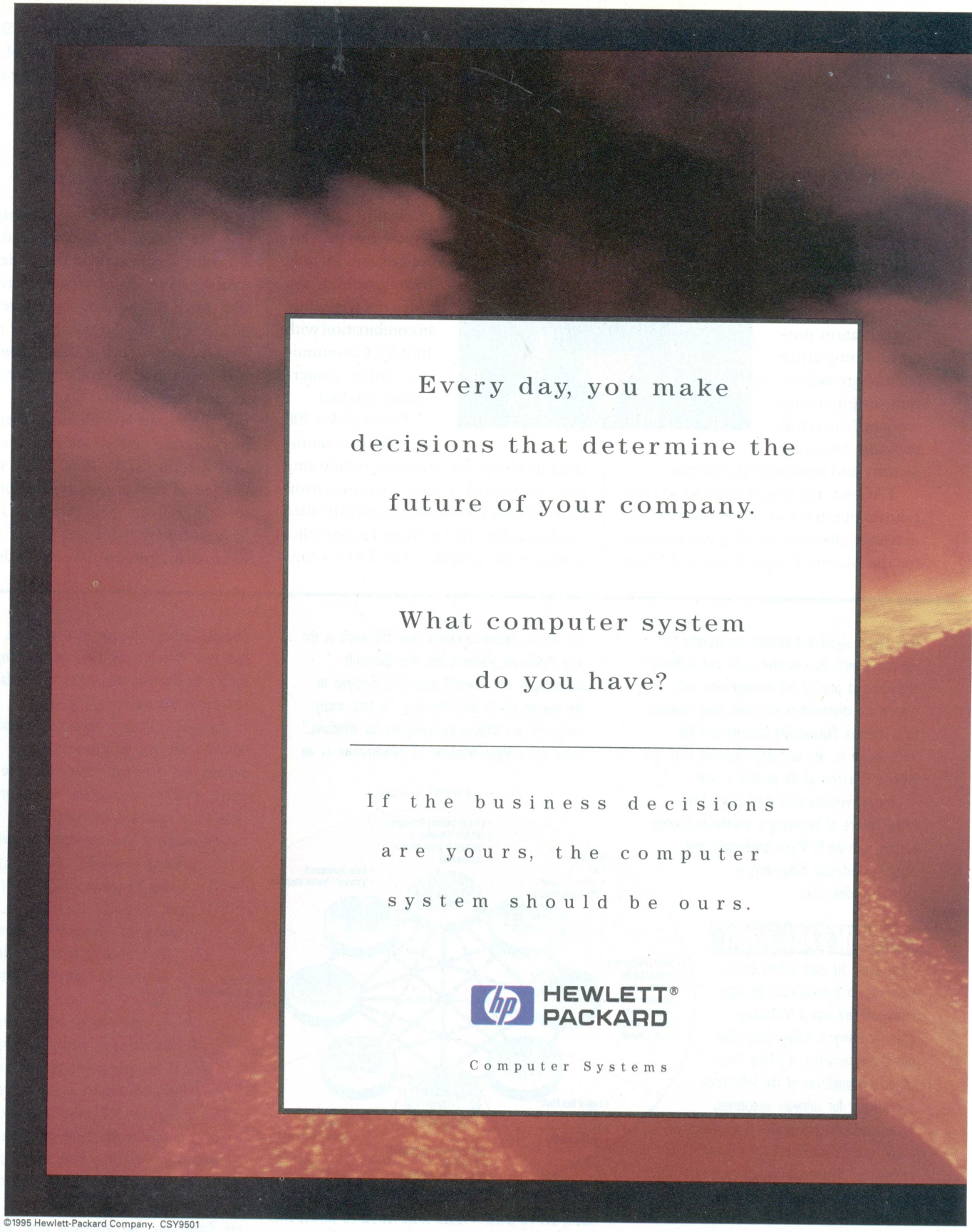
Courtesy of Summit Strategies



SIs, ISVs and VARs will need to combine skills from more than one area. Project collaboration will be key

According to Tarter, in an exclusive interview with HP Professional, the software industry is maturing. And Tarter says methodology or the process of selling products is now more important than a new application. For example, Tarter notes, the industry is now being driven by sales and marketing types, rather than R&D types. "Getting the products to the market on time and a focus on usability are taking precedence over technology-related issues, which historically the software industry didn't pay a lot of attention to."

Interestingly, software vendors, like SIs, need to adopt or adapt to an emerging service business model. Great tech support is now the goal, not cutting-edge R&D, notes Tarter. He says other revenue models being investigated by software vendors include content models (putting phone books on CD-ROM) and data transaction models (Microsoft's budding online service). In the end, Tarter says, "the technology exists, but like Elvis, it's out there somewhere."



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primarily dissatisfied for three reasons: system inflexibility, lack of needed features and limited integration between field sales reps and their home office. "Users can't use the systems as fast as their managers want them to," says Kernachan. "Some packages don't have forecasting capabilities or call reporting for telereps. And it's difficult to share information, for example, between departmental sales and customer service."

Also, SFA systems are making a transition from DOS to Windows (surprise!). Kernachan's advice for buyers: don't hold off. SFA is a way to keep your company competitive. But you need to get a fix on your sales process. "If you don't, you're going to wind up with a mess," she predicts. And with over 600 vendors now in the SFA market, "there's going to be a shakeout."

In fact, as this issue was going to press, Modatech Systems Inc. (Vancouver, British Columbia) announced the selling of its DOS- and UNIX-based customized sales-force automation software business known as ISYS to Fastech Inc. (Broomall, Pa.). Modatech will now concentrate on more generic Windows products that can be sold for business-to-business transactions as opposed to its previous focus on consumer packaged goods. According to Tom O'Flaherty, president and CEO of Modatech, Modatech's new products will be based on its Maximizer relational database product. In the Culpepper survey, Maximizer and TeleMagic tied for first in satisfaction with current users.

Besides the survey data, *Beyond the Blue Sky* contains articles from consultants, user interviews, competitive information on key SFA vendors and a resource guide making it a good guidebook for those planning to purchase an automation system. To purchase a copy of the $695 report, call (404) 668-0616. ●

HP's OfficeJet takeoff delayed for repairs.

◆ In October 1994, after HP introduced its first multifunction peripheral (an all-in-one printing, faxing and copying machine), BIS Strategic Decisions (Norwell, Mass.) predicted that the "HP OfficeJet will jumpstart and help crack open a $3.5 billion multifunction market by 1998." Well, not so fast.

In February, HP, in cooperation with the U.S. Consumer Product Safety Commission (CPSC), voluntarily recalled 10,000 HP OfficeJet (Model C2890A) products sold in the United States and Canada because the power supplies pose a potential electrical shock hazard. OfficeJets with the following 10-digit serial numbers (located on the rear label above the power cord) have been recalled: US4B1 to US4B9; US4C1 to US4C9; US4BA to US4BU; and US4CA to US4CK.

Call the HP OfficeJet helpline at (800) 233-8999 between 6 a.m. and 6 p.m. PST Monday through Friday. Replacement units will be provided without charge the next business day.

Neither a borrower nor a lender be.

◆ Louis Berger International (East Orange, N.J.), an engineering firm, agreed to pay $200,000 to the Business Software Alliance (BSA; Washington, D.C.) after an audit by the BSA revealed the existence of unlicensed copies of software from Autodesk Inc., Intergraph, Lotus, Microsoft and Novell/WordPerfect. Not surprisingly, engineering software giants Autodesk Inc. and Intergraph Corp. are worldwide BSA members, as well as Lotus Development Corp., Microsoft Corp. Novell/WordPerfect and SCO Inc. This is the first settlement in North America for 1995, according to Kim Willard, BSA spokesperson.

It also marks the second engineering firm to have paid at least $200,000 to the BSA to resolve allegations of copyright infringement. This past November, Utica Enterprises (Detroit, Mich.), an auto parts manufacturer, paid $260,000 to settle a lawsuit filed in federal court.

"The engineering industry has an ongoing problem with using unlicensed software," says Willard. "Many are using fairly expensive CAD programs and when they are under pretty heavy budget constraints, corners get cut." But mostly, Willard says "it's a lack of understanding that intellectual property is a tangible good. You wouldn't go into a lot to steal a Volvo, unless you're an auto thief. So, why would you steal software?"

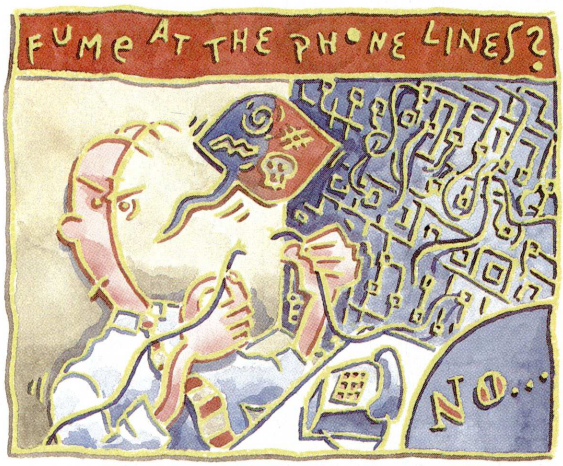
According to Willard, Louis Berger agreed to destroy all unlicensed copies of software and purchase legal software adequate to meet its needs. The company also will implement a software management program to ensure future compliance.

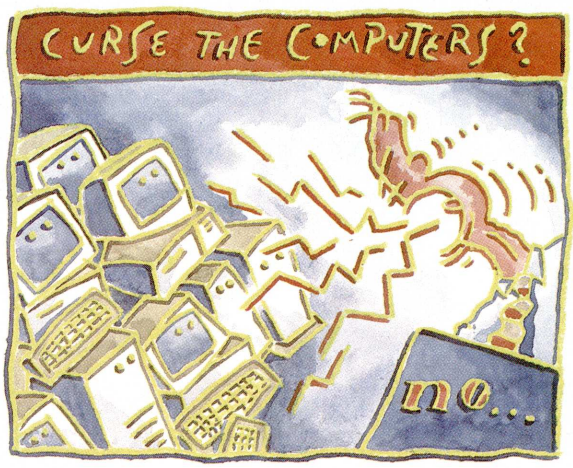
You're bloody well right.

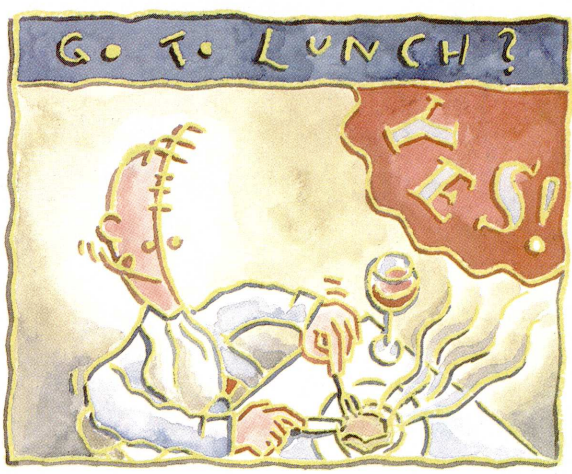
◆ The Washington Post reports that one U.S. business organization had more than a few spelling problems after substituting a software program designed to be used worldwide in its U.S. divisions. Words like "color" were being flagged as misspelled: "colour" was the correct spelling offered. Apparently, someone forgot to replace the British English dictionary with a a standard U.S. English version.

After A Network Problem Threatened To Shut Down His Company's Mission-Critical Applications,

WHAT DID DAVE DO?







That's because there was really no reason to worry. Dave, like managers at more than 3,000 organizations around the world, knew he could depend on Unison Software's networked systems management solutions to keep not only his mission-critical applications running, but all his other processing as well. Unison's products were designed for distributed systems from the outset—redundant management platforms take over if there's a failure of the primary host or network links to the primary. Unison Maestro, Load Balancer and Express are reliable, commercial-strength workload management products for distributed computing. Across both the network and the enterprise. On all the most popular UNIX and open systems platforms. And the products are supported by Unison's nearly 10 years of experience helping companies manage demanding commercial processing environments. So if you'd rather have your managers going to lunch instead of going berserk, call Unison Software today.

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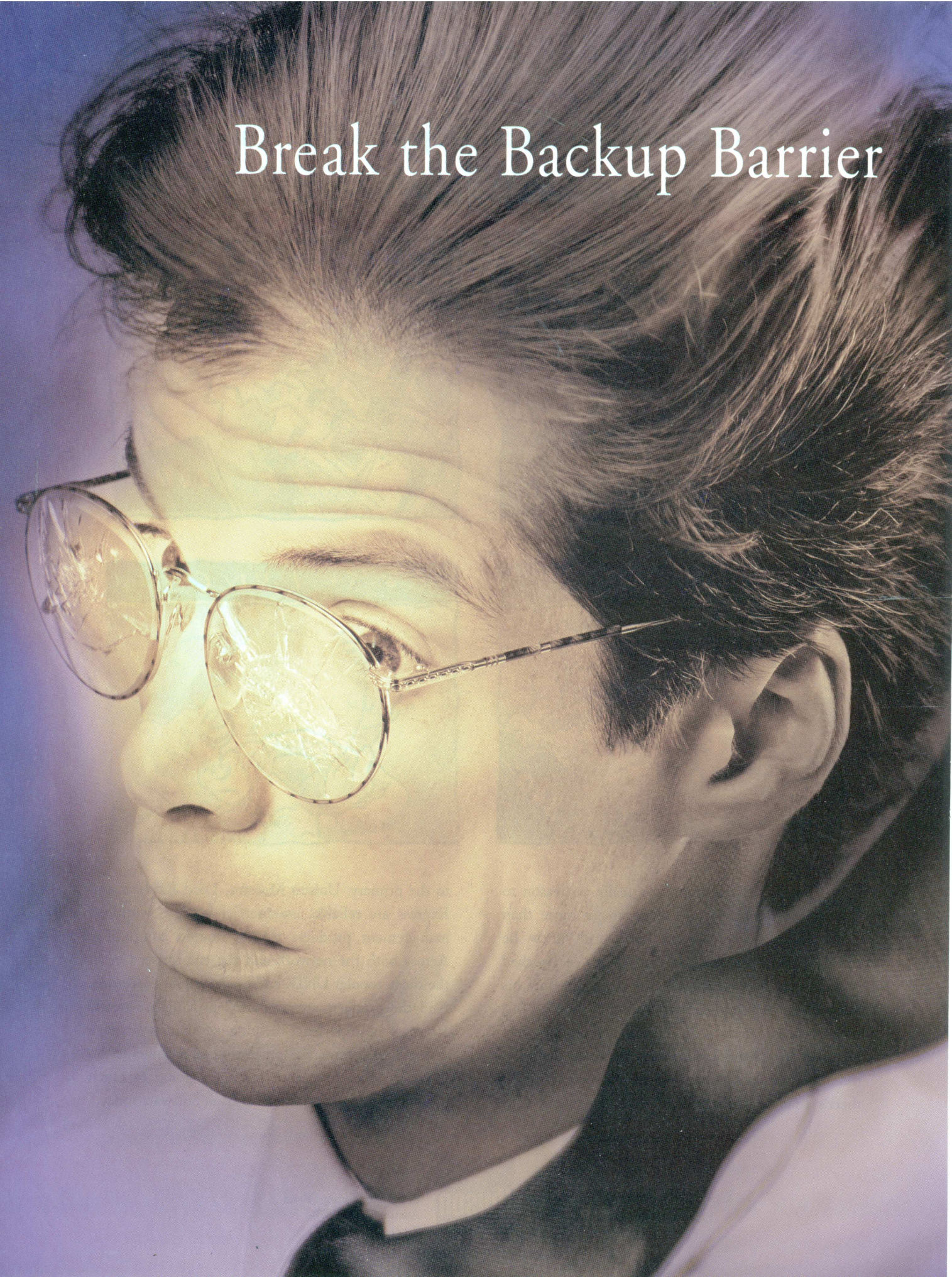
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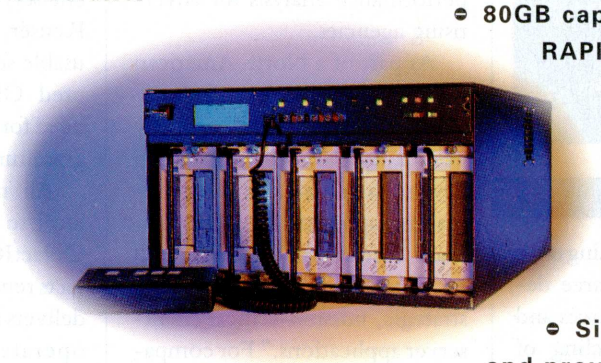

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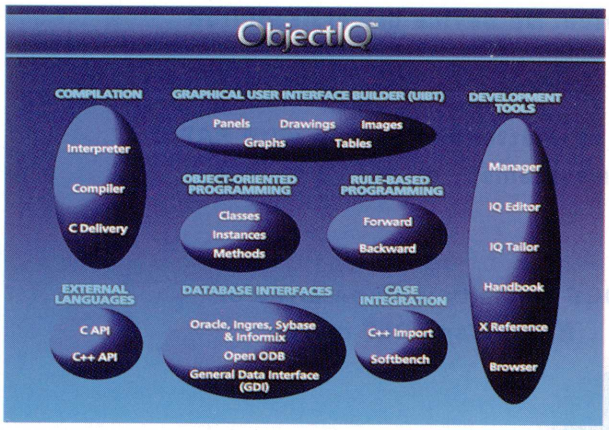
Hitachi Raises An Object's IQ



OBJECTIQ

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- Development version is $3,000 for the first nine users; $2,500 for each additional user

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Programmers needing tools that conserve scarce development resources and facilitate efficient recycling of programming objects should look at ObjectIQ from Hitachi America (New York, N.Y.). ObjectIQ's high-level language compiles to object code and provides full object-oriented programming capabilities: objects (classes and instances), single and multiple inheritance, dynamic binding, flexible datatyping, message passing and method encapsulation. The library contains predefined classes for GUI and database interfaces and over 400 methods.

"It's our task to introduce object-oriented technology software to the North American marketplace," says Steve Wentworth, ObjectIQ's sales manager. Since 1987, ObjectIQ customers in Japan and the United Kingdom have been using ObjectIQ to develop and maintain applications ranging from automated design for tunneling machines to performance analysis for advertising agencies.

As part of a North American rollout, several U.S. and Canadian customers are currently evaluating ObjectIQ for use in design, analysis and decision-making applications. "Our primary customers," he says, "will be UNIX-based shops coding strategic, mission-critical client-server applications." For companies with large investments in legacy applications and databases, ObjectIQ offers broad integration capabilities. "It's easy to wrap existing C and C++ codes into an ObjectIQ application," says Wentworth. You also can embed ObjectIQ code in C and C++ programs, or make C and C++ function calls from within ObjectIQ.

"We fully support Oracle, Sybase, Informix and Ingres — the major relational databases in the UNIX world," says Wentworth. "Using our generic classes, you can also write your own code to interface with data from almost any source. If you can get it to the UNIX workstation, ObjectIQ can handle it." To support rule-based programming, ObjectIQ also features IF-THEN rules, NOT and FINDALL conditions, a procedural method language, pattern-matching and rule groups.

The ObjectIQ family includes two standalone members: ObjectIQ-DF, a distributed client-server version, and ObjectReuser, a managed library of reusable software objects. Distributed ObjectIQ eliminates the need for low-level network programming.

All network objects appear local to the developer, because ObjectIQ-DF automatically detects remote object addresses and delivers messages to them. It also operates under OSF/DCE. ObjectReuser is a managed library of software objects. Users find stored components by navigating the library's hypertext links with a graphical browser.

ObjectIQ products run on HP 9000, IBM RS/6000 and Sun SPARCstation UNIX workstations. The run-time version of ObjectIQ costs $450 for the first nine users and $375 for each additional user. ObjectIQ-DF costs $5,000 with one server and 10 clients. ObjectReuser costs $1,500 for the first nine users and $1,000 for each additional user.

—Judith Harper, Contributing Author

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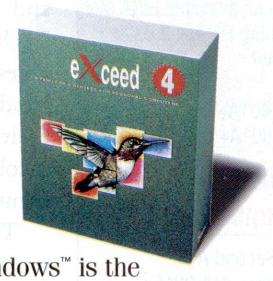

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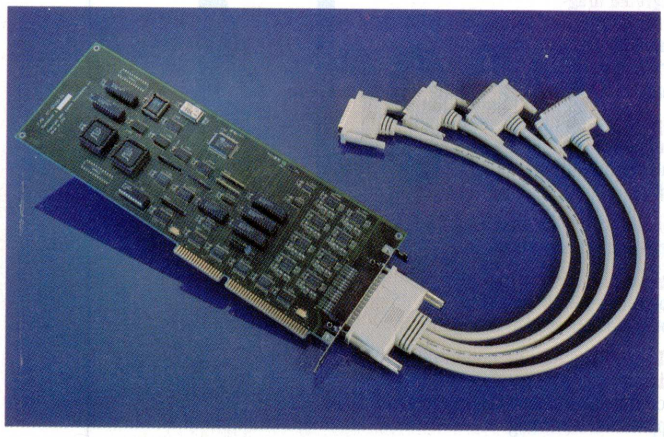

401A+/801A+ COMM SERVERS

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- The 401A+ costs $1,295, the 801A+ costs $1,995

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Computer systems today are becoming more and more dispersed, but companies still need to transfer and share data easily. Aurora Technologies (Waltham, Mass.) gives organizations a helping hand with this dilemma with their 401A+/801A+ multiprotocol synchronous/asynchronous communications cards.

The serial communications servers provide high performance HP 9000 Series 700 workstation LAN and WAN connections with the speed, reliability and security of synchronous data transmissions. The communications servers are compatible with the following protocols: Point-to-Point Protocol (PPP) combines features like demand dialing, sync and async support, transparent TCP/IP services for file and application sharing, and remote system administration over low-cost dial-up phone lines; X.25, commonly used to link international public and private networks, allows HP workstations to serve as a multiplatform gateway to X.25 WANs and remote systems for remote LAN sharing; SNA connectivity software, provided by Aurora partners, which allows for HP-UX integration with IBM 3270, 3770, LU.0 and LU6.2 networks.

HDLC and SDLC APIs provide direct access to these link layer protocols for integration of high-performance communication capabilities into custom applications. A Sync Developers Kit provides API and optional DLPI interface to network layer protocols allowing custom and off-the-shelf applications to use the functionality of Aurora hardware for remote LAN sharing.

Julian Pignatel, technical support at RISC Technologies (Paris, France), a computer systems distributor, is using Aurora Multiprotocol WAN Servers to link their French headquarters in Paris to a branch office in Lyon with an X.25 public data network via an HP 9000 Series 700 system.

Communication servers combine up to 80 MIPS of dedicated RISC processing, dual-ported DMA buffers and flow control processing, to manage I/O transactions on-board, freeing network bandwidth and CPU cycles for an improvement in system and application performance.

RS-422 and RS-485 compatibility support long distance network links and multiple peripheral drops from a single line. Port-level protocol assignment allows sync and async routing and bridging among multiprotocol LANs.

There are two modules available. The 401A+ provides four high-speed lines from a single slot. The 801A+ provides eight high-speed lines from a single slot. They have baud speeds up to 115.2K (async) and 128K (sync), all full duplex. And, base memory is 128K wide. The 401A+ and 801A+ provide support for HP 9000 Series 700 workstations with an available EISA slot running HP-UX 9.03 and higher.

According to Pignatel, the major determining factor in their choosing the Aurora communication servers was the price. The 401A+ costs $1,295. The 801A+ costs $1,995.

—Deborah Schwartz, Assistant Editor

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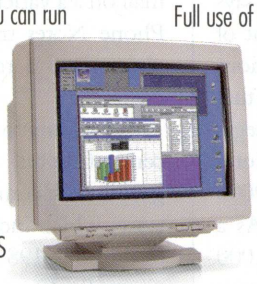

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New Age Gurus of Groupware

Lotus Development Corp.

"Notes is a platform for a new class of unstructured networked applications."

Jeffrey Papows
Vice President
of the Business
Communications Group
Lotus Develoment Corp.

Lotus Development Corp.

One Rogers St.
Cambridge, MA 02142
tel: (617) 577-8500
fax: (617) 693-1299

CIRCLE 355 ON READER CARD

When Lotus Development Corp. (Cambridge, Mass.) was founded in 1982, the world was already beating a path to its door. Lotus' 1-2-3 spreadsheet was the proverbial "better mousetrap." Actually, it was just a better spreadsheet than VisiCalc, the leading product at that time. And it ran on a PC, a new kind of desktop computer introduced in 1981.

Since then, Lotus has gone through several transitions — from desktop PC software supplier to best-of-breed applications suite supplier. But most recently, Lotus has been busy transforming itself into a leading supplier of a new kind of software called groupware. The software is named Lotus Notes, and it's helping companies collaborate and work together.

Sort of a cross between a database and a BBS, Notes is a kind of EDI for business information, according to IDC (Framingham, Mass.). Notes is Lotus' next "better mousetrap."

"It's a mission-critical app," says Jeffrey Papows, vice president of Lotus' Business Communications Group. HP is helping to prove that claim. As a result of a strategic agreement with HP last year, Notes 3.2 began shipping on all HP 9000 Series 800 business servers. As a Notes reseller, HP joins over 8,000 Lotus Business Partners — system resellers and ISVs exclusively selling the product.

Although developers can take advantage of 25 provided templates, Notes can be customized,. So, Lotus formed the Lotus Consulting Services Group (CSG) in 1990 to help businesses implement the software in their organizations. Notes' one million users reside in a wide variety of 4,000 worldwide corporate sites, including: Asea Brown Boveri, Boston Chicken, Cyrix, Chase Manhattan, GM, HP, Intel, Marpass Spa, The National Pollution Fund Center, P&G, Texaco, United Airlines and Vaerdipapircentralen.

Notes (along with Lotus cc:Mail Mobile) is also the cornerstone of Lotus' mobile computing strategy. It's part of the company's 21st century thrust to remake itself into a communications company. cc:Mail Mobile (as well as Lotus 1-2-3) is included in the ROM of HP's 200LX hand-held palmtop. It allows users to scan E-mail on cc:Mail post offices without having to download those messages. A Notes Pager Gateway enables Notes users to send and receive mail on a a variety of pagers. And Phone Notes transforms a telephone into a remote client for Notes.

According to Papows, 60 percent of Lotus' R&D spending goes toward communication software, which includes Notes. Introduced in 1989, Notes now accounts for 40 percent of the Business Communications Group's revenue, growing much faster than its traditional desktop business.

But the $1 billion Lotus remains in the shadow of the $4 billion Microsoft, which unseated Lotus 1-2-3 with its own Excel spreadsheet and dominates the market for desktop applications. But "Microsoft hasn't shipped a product," stresses Papows, referring to Microsoft's Exchange — a product expected to be similar to Notes. "It's a platform in vaporlock."

Unlike Notes, which consists of 3 million lines of code, Papows says, Exchange will have no replication technology — a feature unique to Notes — or LAN/WAN capabilities. Application development capabilities also will be limited. When Notes 4.0 ships by mid-year, it will include the delivery of both client- and server-based agents. Six years after it was introduced, most analysts agree that Notes is looking like a winner. A study of Notes sites by IDC found that the "potential for financial returns was very high." And that much of Notes' value could be found in its new "model for communications."

"Notes is a platform for a new class of unstructured networked applications," says Papows. "And while Notes isn't going to eclipse traditional databases. It's different than the OLTP world we all grew up in."

—George A. Thompson, Technical Editor

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TECHN MELT

Jim Esch

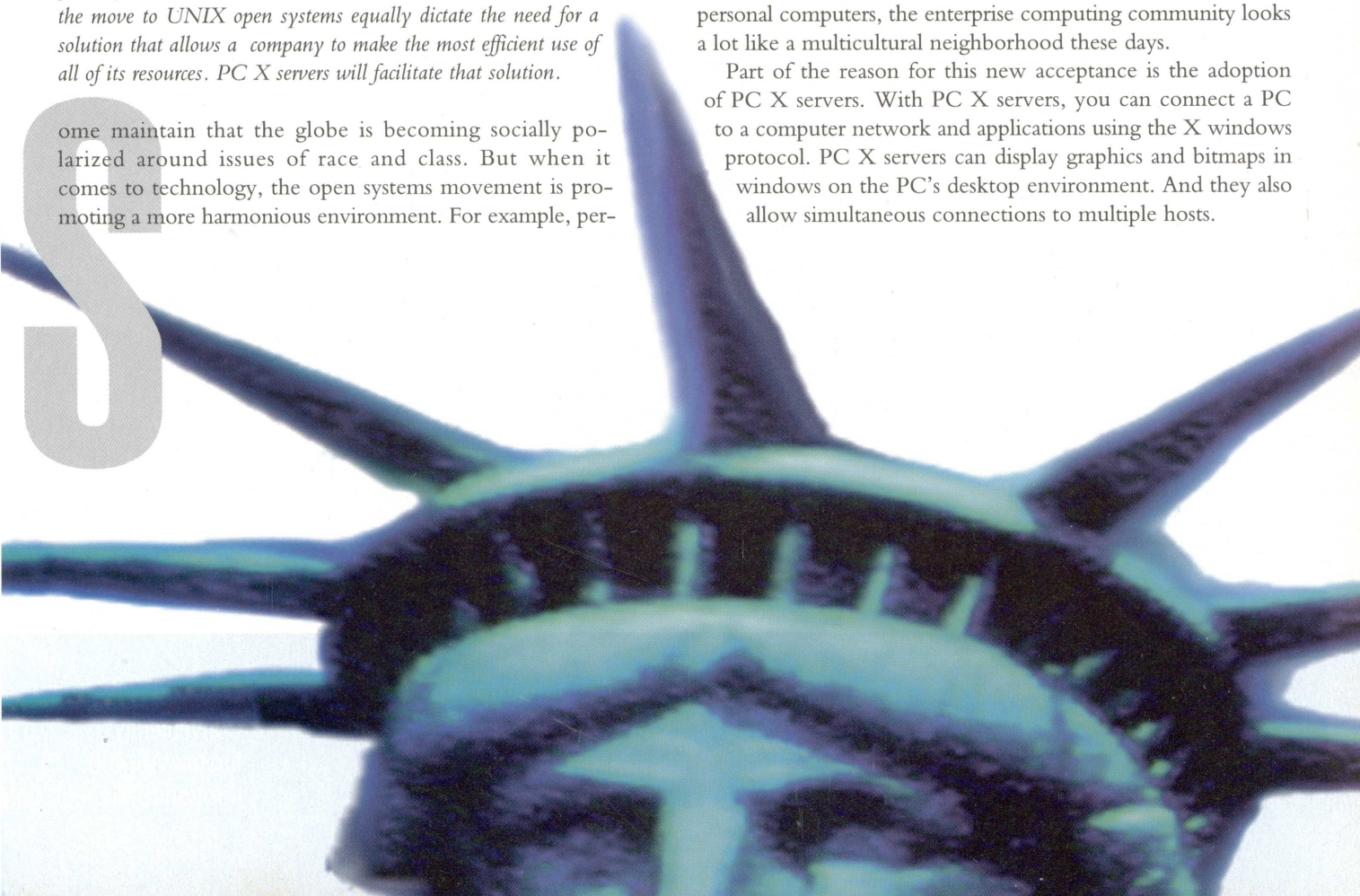
OLOGICAL ING POT

PC X Servers Help End The PC-UNIX Turf Wars

The move to PC X servers is driven by a number of factors. The emergence of TCP/IP as a de facto standard, corporate downsizing and the move to UNIX open systems equally dictate the need for a solution that allows a company to make the most efficient use of all of its resources. PC X servers will facilitate that solution.

Some maintain that the globe is becoming socially polarized around issues of race and class. But when it comes to technology, the open systems movement is promoting a more harmonious environment. For example, personal computers were once shunned by technical workstation users. But now that UNIX workstations work side-by-side with personal computers, the enterprise computing community looks a lot like a multicultural neighborhood these days.

Part of the reason for this new acceptance is the adoption of PC X servers. With PC X servers, you can connect a PC to a computer network and applications using the X windows protocol. PC X servers can display graphics and bitmaps in windows on the PC's desktop environment. And they also allow simultaneous connections to multiple hosts.



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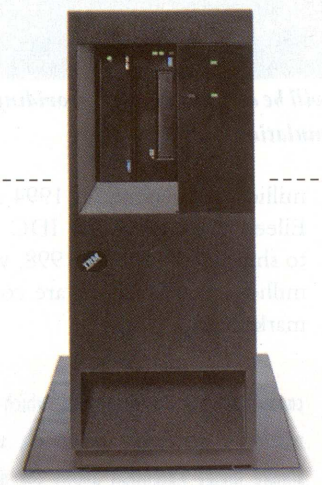

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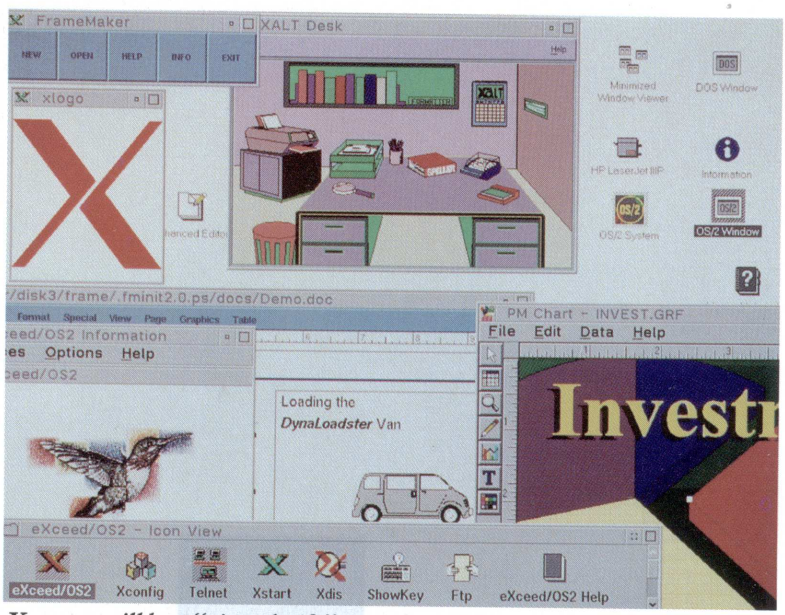
MELTING POT

The move to PC X servers is driven by a number of technological factors:

■ **Emergence of TCP/IP as a de facto standard.** TCP/IP is a common protocol toward which PCs and UNIX workstations can aspire. It doesn't hurt that usage of the TCP/IP-based Internet is growing and that Microsoft is going to bundle a generic TCP/IP stack in Windows '95 (*see TCP/IP Connectivity sidebar*).

■ **Corporate downsizing and the move to UNIX open systems.** Because downsized corporation workers have been saddled with more responsibilities, they tend to leave the exclusive domain of their desktop PCs behind and need to become accustomed to additional platforms like a workstation or a dedicated X terminal.

PC X server software provides the solution. Like an overburdened employee, the PC now does double duty, running the usual Windows/DOS-based software while also tapping into the enterprise-wide infrastructure running on X windows. The company saves money on hardware and training time, and saves space on the desktop.



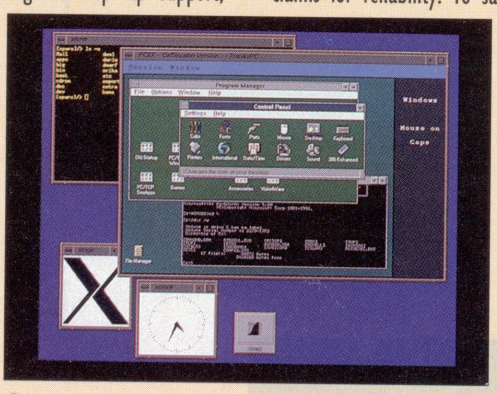
X servers will be a "ginzu knife" providing TCP/IP, 3270, 5250, X, as well as SQL emulation.

With these advantages on their side, the PC X server market has doubled in each of the last four years. This year the International Data Corporation (IDC) estimates about $82.2 million in revenue for 1994 and predicts $140 million in 1995. Eileen O'Brien of the IDC expects 2.4 million PC X servers to ship worldwide by 1998, with the market expanding to $328 million. PC X servers are coming on strong in the X terminal market too.

TECHNICAL FREEDOM FIGHTERS

Hummingbird's eXceed 4 for Windows software offers a 32-bit PC X server, VxD-based TCP/IP network software, high-speed serial access to X hosts over phone lines, an X development kit, a BASIC scripting language, and other network installation and administration utilities. It is compatible with X11 R5 and permits multiple X windows applications running under UNIX, VMS and other hosts. Windows and host-based X applications run on the same PC screen. Users can cut and paste from one window to another, integrating data from different environments. Other features include a local Motif-like window manager, local printing and drag-and-drop ftp support, LPD support for printing from a UNIX host to PC printers, VT320 emulation, a graphical keyboard configurator and Launch Pad — Hummingbird's user programmable menuing facility. Hummingbird also offers X servers for Windows NT, OS/2 and MS-DOS.

Network Computing Devices Inc.'s (NCD; Beaverton, Ore.) PC-Xware 2.0 maintains it contains features not found in other X servers, features like remote management, configuration and monitoring targeted at larger workgroups. It is said to be a memory-hungry server, with 8 MB of PC RAM recommended. It does support concurrent window managers, which many UNIX users may appreciate. Also notable is proprietary multimedia support not found in other servers. Its Simple Image Extension allows the display of X applications that manipulate images, and its Network Audio system plays audio-supported X applications on the PC.



Cosession/PC2X inverts the idea of PC-UNIX intergration by allowing remote control of personal computers from a UNIX workstation.

WRQ's Reflection X Connectivity Suite is perhaps the fastest growing PC X Server product. This has a lot to do with the reputation of the company as a top terminal emulation provider, but also because of the company's claims for reliability. To say that Reflection X was rigorously beta tested is a gross understatement. They had 2,000 beta test sights for version 4.1. In less than a year, they had grabbed 8 percent of the market. WRQ licensed the server code from AGE Logic (San Diego, Calif.). WRQ added things like a network stack and, what else, terminal emulation to flesh out the overall product. The company is aggressively marketing the connectivity suite as an all-in-one solution for those users who don't want the hassle of piecing together components from multiple vendors.

White Pine Software Inc. (Nashua, N.H.) provides a native PowerPC PC X server for

The market is growing quickly for one reason — the success of UNIX in bringing open systems to large corporations. "We're piggy-backing on that success," says Peter Auditore, director of marketing for Hummingbird Communications (Mountain View, Calif.), the market leader in PC X servers. "So wherever Sun, HP, IBM and DEC ship machines, they're planting seeds for us. More importantly, 60 percent of what Hummingbird's clients connect their PC X servers to are in-house developed applications. It's an organizational decision made from the top down."

On The Origin Of X

Matt Hulett, product marketing manager for Walker Richer & Quinn (WRQ; Seattle, Wash.), agrees. "You never walk into an Egghead [Software Store] and say I want a mission-critical process control application for a brewery. These applications are very specific to the organization. They think of the application first, then think of the technology they need to support that." Typically users have two different hosts that need the same GUI interface, so they choose the X server to tie together the desktop.

When it comes to X windows, everybody is welcome at the party. "They're not trying to control the desktop like our friends over in Redmond," explained Hulett. "So from that perspective, it's socialistic. Microsoft's philosophy is 'get Windows on

the Power Mac. Their eXodus server is licensed from Visionware, and it also offers a server for Next workstations. Key features of eXodus for Windows v5.5 include "tab-folder-style" dialogs, WinSock-compliant TCP/IP and VT emulation, plus high-speed serial connections. The next release will add a VxD network stack.

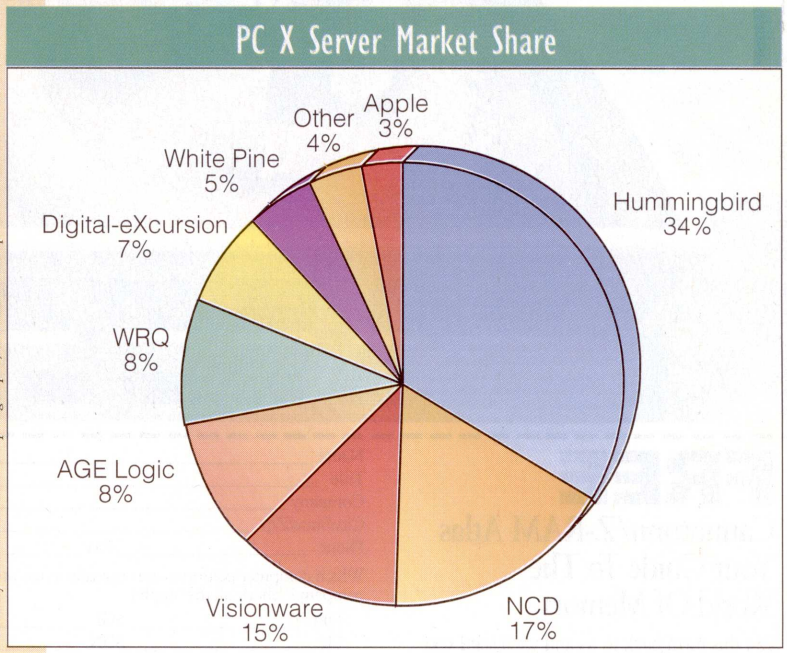
AGE Logic (San Diego, Calif.), like Visionware has offered technology licensing programs for its PC X server. AGE's Xoftware is licensed by WRQ, FTP, JSB and Distinct. They are now packaging their own product. XoftWare/32 EDA Edition for Windows and NT, which was engineered to support Mentor Graphics applications. AGE also has announced a cross-licensing and development agreement with Apple, the aim being to beef-up Macintosh PC X servers.

Unipress Software (Edison, N.J.) also offers a PC X server, licensed from Visionware, but they are noteworthy right now because of their product Cosession/PC2X. This inverts the idea of PC-UNIX integration by allowing remote control of personal computers from a UNIX workstation. The DOS and Windows computer displays in an X window. Multiple PCs can be worked on simultaneously. Such a solution might be good for remote training, troubleshooting, help desks or remote network management. The software is not an emulator; the applications run on the PC itself. — JE

TCP/IP Connectivity Concerns

The first TCP/IP stacks for PCs were terminate-and-stay resident programs (TSRs), which took up to 40K of a PC's conventional memory. The problem was that certain PC applications couldn't really get fired up in the reduced conventional memory space. To relieve these headaches — Dynamic Link Libraries (DLLs) within Windows were devised. The network stack doesn't use any memory until it employs the DLLs. Most of the memory it uses is expanded or extended memory, only using up about 8K or 9K of conventional memory.

In the Windows environment, Virtual Device Drivers (VxDs) are now using no conventional memory at all, only expanded memory. There also are hardware solutions known as smart cards, essentially an additional Ethernet card that runs the TCP/IP stack for the PC. Although VxDs are the most fashionable solution, their performance is slower than TSR stacks. Once the proper network stack has been selected, that doesn't necessarily mean the headaches are over. According to WRQ's Matt Hulett, installation problems run the gamut from "'what's this net.cfg?' to 'what are all these files?' to problems with Windows sockets to incompatibilities like 'how do I start my X application?'" They've tried to alleviate these problems by adding a more intelligent client startup utility to their connectivity package. — JE



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each desktop.' X's philosophy is 'the application's somewhere else, and everybody has the same interface spread across the organization.' Darwin would love X; it's very adaptable. I think the downfall will be if that message doesn't get out."

Les Farkas is a computer engineer at NASA's Lewis Research Center (Cleveland, Ohio), which performs research in aeropropulsion, space power and communications, electric propulsion and microgravity. About six years ago, they installed a data acquisition system for the display of time and frequency data in real time. NASA wanted to combine that software, which had just been ported to X, with their Lewis Information Management System, a Microsoft Windows-based office automation system running on a VAX cluster. They chose Hummingbird's eXceed PC X server to tie them all together.

Because they had a big investment in PCs already, Farkas decided to analyze how they could use those PCs to display X applications. "We have a real heterogeneous environment out there," says Farkas, including a Cray, a couple VAX clusters, Convex and then about 1,500 workstations of various types: HP, Sun, SGI, DEC, IBM and RS/6000s.

"Darwin would love X; it's very adaptable. The downfall will be if that message doesn't get out."

Farkas is working on a project at NASA called Numerical Propulsion Systems Simulation — it simulates jet engines in software for designers. He and his colleagues are using configuration management and software engineering tools, as well as FrameMaker among other packages on HP workstations. "A lot of people are using [the HP workstations] to make the PC look and feel like an X terminal more than a Windows-based application," states Farkas.

While Farkas admitted that PC X server performance still doesn't match up to a hardware X terminal, he maintains that most people are not driving the X servers to their fullest extent. "So there's a lot of performance bandwidth left over. The performance you can get out of a 486 [PC] running the latest versions of a quality X server, are comparable and even exceed what X terminals were doing maybe four years ago. I know there's DOS and Windows emulators, but still, you just can't beat that combination. The initial reason for investigating PC X servers was to save money. I think we accomplished that very well at NASA," says Lewis."

But X can tax a network. According to WRQ's Hulett, 70 percent of their technical support problems are really networking problems. "Then there's the maddening confusion and inversion of the terms "client" and "server" as you move from one platform to another. "It's very strange," says Hulett. "This is the ultimate mind game, when you say, 'we sell an X server on a client PC. You connect to an X client on a server.'"

Still, there's no denying that PC X servers are increasing in popularity. Microsoft will include a TCP/IP stack in Windows '95, another door for X servers into the enterprise. According to Hummingbird's Auditore, the future [two to three years from now] is going to be "a ginzu knife product" that provides you with TCP/IP (if its not bundled already in the operating system), 3270, 5250, X emulation, maybe some SQL and some terminal emulation. PC X servers will be bundled into these connectivity suites, which are going to be just like a word processor or spreadsheet is today. — *Jim Esch is a freelance writer specializing in high technology, based in St. Louis, Missouri. He can be reached at* jmesch@artsci.wustl.edu.

Choosing A PC X Server

When it comes to choosing a PC X Server, users should look for 32-bit engines with rigorous font support and seamless graphical integration that permits customized windowing environments, whether it's Microsoft Windows, Motif, OpenLook or any other X window manager. Some other desirable features include VT terminal emulation, local printing options, font substitution, ease of network installation, a fast and memory-stingy TCP/IP stack, serial access over phone lines, copying and pasting between windows, virtual screen and good color support, support for Windows sockets and a standard TCP/IP suite of utilities like telnet, rlogin, rexec and XDMCP.

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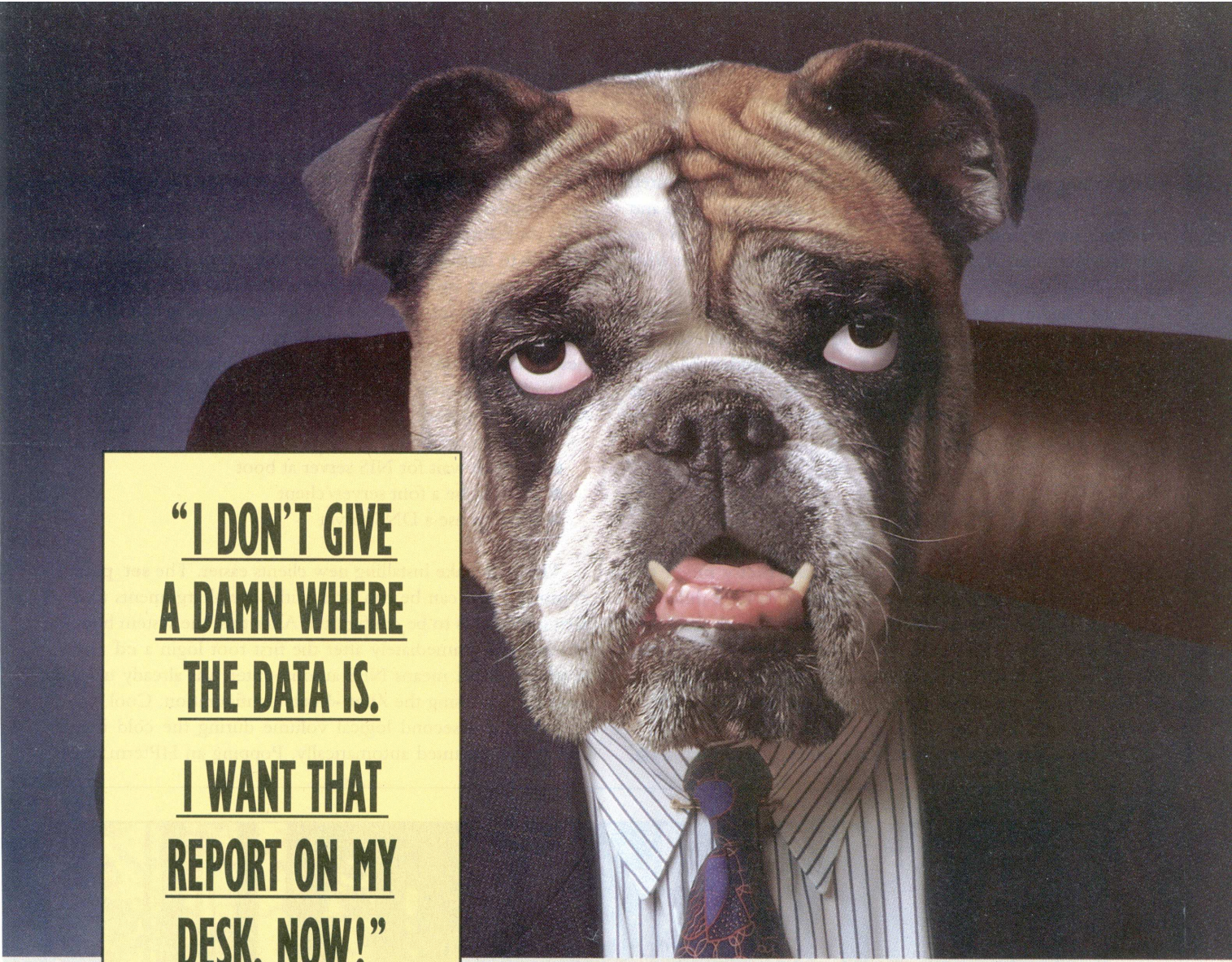
Users Prepare As HP Launches HP-UX Version 10

V minus 10

February 1995, HP announces HP-UX 10.0. A few things will look familiar, many will not. This article provides a hands-on tour of some of the changes from HP-UX 9.x. Some are expected, others had our author pulling out the old UNIX Operating System Internals text books to see if he was dreaming. However, because there are so many changes to HP-UX, we are presenting a three-part series that will evolve throughout 1995 as HP-UX 10.0 evolves. What follows is Part One covering the "What?" and "Why?" of HP-UX 10.0. Expect Part Two in July and Part Three in November.

Fred Mallett

Here I sit, staring at my screen, looking at the HP VUE interface. And guess what? It looks the same. I'm still staring; I don't see anything different. So far so good, I guess. But that doesn't give me anything to write about for the next 2,000 words. So I'd better look a little closer.



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V minus 10

What I've got before me is a pre-release version of HP-UX 10.0 running on a Model 710 workstation. My NFS mounted home directory is there, my VUE customizations are there and my applications (compiled on HP-UX 9.01) still work. In certain configurations and conditions, they work even faster than under HP-UX 9.x.

Oops, looking closer, I see a small change on the front panel. It's an audio control button on the lower row in the default load. But the real changes in HP-UX 10.0 are under the hood where they belong. Non-technical and OS ambivalent users won't even notice, but system administrators will immediately get shocked without some forewarning.

The Same But Different

THE COLD BOOT PROCEDURE goes pretty much the same as HP-UX 9.x, but some of the prompts look different. There are prompts here for configuring the disks with the Logical Volume Manager (LVM). Once the cold boot completes and the **swinstall** starts, the screens and prompts are different. In fact, it took me a minute to figure out how to navigate around the ASCII menus and to change fields.

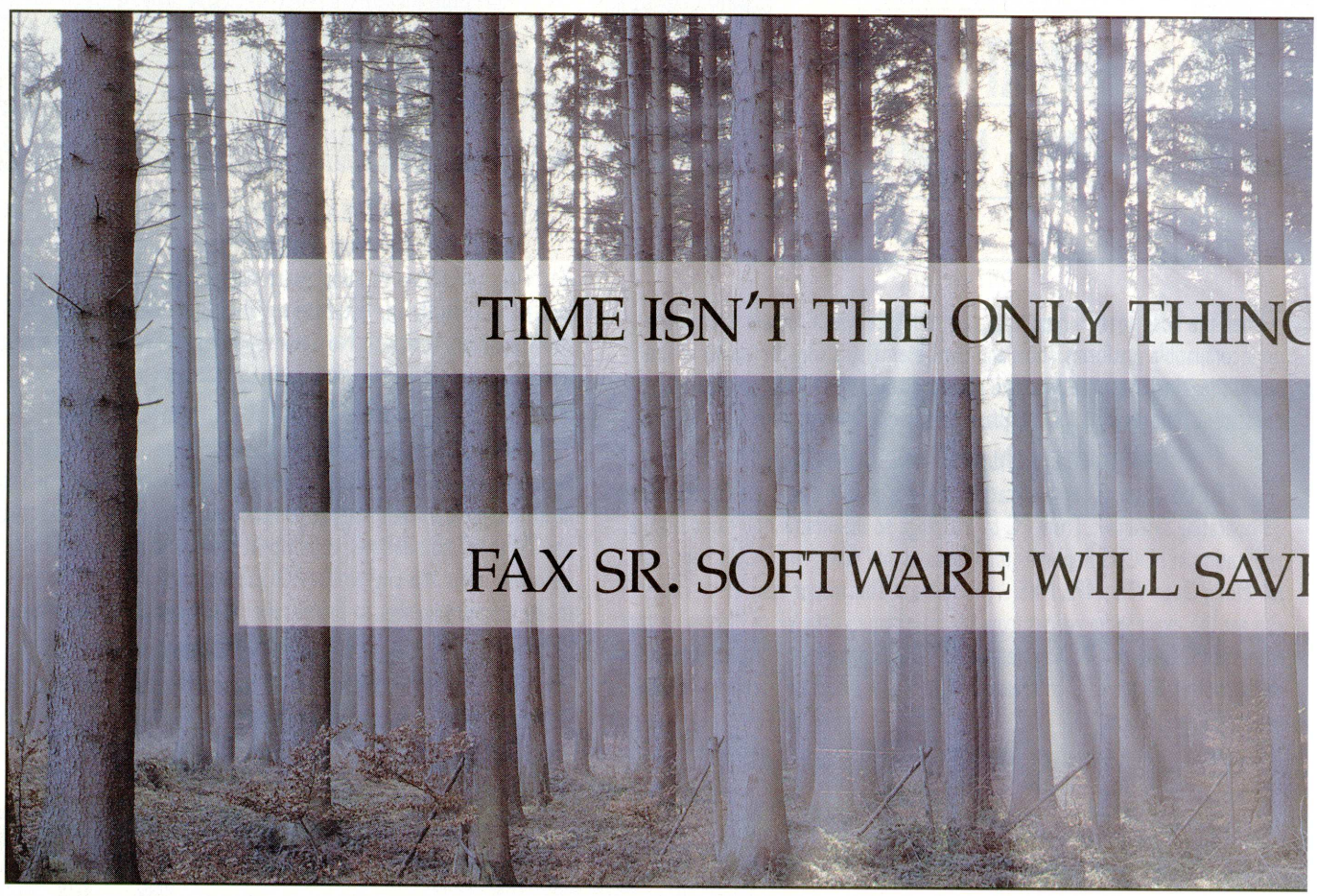
The space bar pops up menus on some changeable fields, and unfortunately this was not documented until a couple screens after I needed it. The load I chose was full, but without the international character sets it took 167 MB.

It took about three hours, including the new file system on the disk to load. I presume the real shipped tapes will have data in the correct order on the media, because there was lots of wasted tape spinning. I started to be impressed when the load finished, and the new **set_parms** ran in "initial" mode for a new install startup. The usual questions about hostname, IP address and time zone were all there, but now it asked me the following new stuff:

- Want to use NIS
- Want to wait for NIS server at boot
- Want to be a font server/client
- Want to use a DNS server

This will make installing new clients easier. The **set_parms** command also can be run later with several arguments to determine what is to be configured. After this, the system booted as expected. Immediately after the first root login a **cd /net/** worked, which means NFS automounter was already up and running, and using the **/net -hosts** configuration. Cool.

I created a second logical volume during the cold install, and it was mounted automatically. Popping an HPterm, turns



out the default shell is no longer /bin/sh the Bourne shell: it is now /usr/bin/sh, which is the POSIX shell.

Sam I Am

UNTIL I LEARN HP-UX 10.0, **sam** seemed the answer to checking things out — there were so many changes to file locations and device file naming. **sam** took as long as ever to start, and the "new" **sam** interface, which looks like the file manager — all icons, no menus — was easy to navigate without any documentation.

sam takes so long to startup because it polls the bus to get an I/O configuration. This can be a pain if what you want to use it for is to control users or processes, where the **sam** "learned" configuration is not used anyway. NIS administration was still not handled. After closing **sam**, a **/etc/mount** was issued and I got my first look at the new device file naming.

/dev/vg00/lvol1 and **/dev/vg00/lvol3** were mounted (lvol2 was swap). That sure looks nicer than **/dev/dsk/c201d6s0**. The new **lvolX** syntax reflects the use of LVM. The new device files name for the old **c201d6so** would be **c0t6d0**.

At this point, I decided to revise the projected income we expected from HP-UX 10 Administration transition training. I feel that a system administrator proficient in HP-UX 9.0 can work with HP-UX 10.0 without much trouble setting-up new machines and integrating them into a network. To take advantage of all the new HP-UX 10 features, some information is required. But, how can you use it if you don't know it's there? So, where do you turn for more detailed information?

The Release notes are always a good source for finding what has changed and what will be available at release time. From there, you can check out the new versions of manuals. Or, take transition classes.

Native Language Support is found throughout the commands and is usually referred to as "4 Byte EUC" in documentation. 4-byte EUC (Extended UNIX Code) is the character code representation that is used as part of HP's Native Language Support. It is an accepted standard.

The Three Faces Of HP-UX 10.0

CHANGES IN HP-UX 10.0 roughly fall into three categories: performance, compatibility and unification. The first two are self-explanatory. Unification refers to uniting the HP 9000 Series 800 and 700 versions of HP-UX so that they are as identical as possible. Although there are some features of HP-UX

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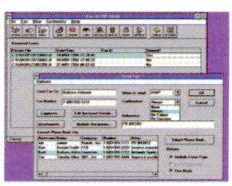

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10 that are used only by the workstations or the servers, nearly everything has been unified between the two platforms — from kernel to device file naming to the LVM.

Administrators of the HP 9000 Series 700 workstations and 800 servers should be happy as the unified kernel is the same on both, and they share a common Application Binary Interface (ABI) and Application Programming Interface (API). Of course, the configuration will be different between series, so the built files will be different. There is also no /hp-ux, dfile or genfile. The kernel and all the build mechanisms have been moved to /stand. The kernel is /stand/vmunix. The equivalent of a dfile or genfile is /stand/system.

It looks like the HP-UX 9.0 series dfile format. The kernel build mechanism has been changed drastically and for the better. The kernel will be built from files in /usr/conf/master.d. In order to add a driver, a file is created in that directory. Upon build, it will be processed. You don't even execute **config** anymore, there is a new command called **/usr/sbin/mk_kernel**. In addition to how you generate a kernel, as you can guess, there were many changes to the internals.

Disk swapping is gone, replaced with a process deactivation scheme that should prove more efficient. Instead of swapping an entire process to disk, which often aggravates a thrashing condition, the process is now removed from the run queue (deactivated). In this way, pages in memory may, or may not, be stolen by another process. The jumpy performance of old 9.x "hang on while I swap huge processes to/from the disk" should be smoothed out by this mechanism.

Paging has also affected the "niceness" of HP-UX 10. The nicer a process is, the better chance that the pager will steal pages from it. The opposite then is also true. The higher priority a process is, the less chance that pages will be stolen and the less chance the process will have to page when it runs.

In addition to swapping, **serialize()** is a new command and system call allowing all processes also running in serialize mode to execute as if from a list. The list order is determined by the system based on priority, and cannot be changed directly. This prevents these processes from competing for memory and CPU resources. Huge gains can be had here if the processes each deal with large data files/arrays. STREAMS is now part of HP-UX 10.0.

Service Guard is now available for the HP 9000 Series 800, superceding the SwitchOver/UX product. Service Guard allows you to build service clusters that share applications (services) and in case of a node/network/application failure, another node (host) will take over running that application.

Memory will now dynamically deallocate bad pages on a memory board. I feel this is overdue in the industry. With the density available on a single chip/board, it really does not make sense to replace 256 MB for a single bit error. Some older systems have been able to deactivate by the bank only.

HP-UX 10 now has a Realtime "Deterministic" scheduler based on the POSIX 1003.4 standards draft. This scheduler allows processes to attain priorities higher than **rtprio 0**.

HP 9000 Series 800s also get the Dynamic Buffer Cache that was on Series 700s under HP-UX 9.01 and up. Changes from 9.01 include new kernel parameters of **dbc_min_pct** and **dbc_max_pc** which should prove easier to manipulate than the old **nbuf** and **bufpages**. In order to use fixed disk buffering, if needed, set min and max percentages to the same value.

Substantial improvements to the handling of memory mapped files should be seen in V10 (I didn't try to benchmark this one). Under HP-UX 9.x, all files were handled by up to 16 page look ahead, even if the program was accessing data randomly. Under V 10, an algorithm is used to determine the pattern of file access. If it is random, the amount of the file accessed on a page fault will be reduced. If sequential, it can increase up to some large number (64 under pre-release versions).

The effort to simplify administration between HP 9000 Series 700 and 800 platforms also includes the I/O convergence work. This means disks bought with converged disk proms can be moved between Series 700s and 800s and mounted.

A new optional product called HP PRM (Process Resource Manager) allows an alternative method of scheduling processes, where you can arrange them by groups and prioritize accordingly, as well as guarantee each group and amount of CPU time. This is very similar to the old unsupported FSS (Fair Share Scheduler) that was available from the SE tapes.

No License to Steal

ONE THING I NOTICED IS bound to cause some problems. For Series 700 workstation users, the two-user license seems to have been taken more seriously than in the past. Under HP-UX 9.x, someone could be logged into HP VUE, another user logged in across the network, and you could still open an HPterm and do a login. Under 10, if you try to login to an HPterm with a different username than who is on the console, you get the following error message "Sorry, maximum number of users already logged in." Multiple different users can still login over the network.

Speaking of logins, here's another issue to remember. The required accounts in the passwd file now number 16 instead of 8. Also, secure passwords have been more fully implemented, and no longer use the /.secure/etc/passwd file for storage.

Part Two of Fred Mallett's review of HP-UX 10.0, appearing in the July issue of HP Professional, will delve into the file system and installation of the OS. Part Three will cover SAM, networks and DCE, and will appear in the November issue.

—Fred Mallett is owner of FAME Computer Education, which provides UNIX usage, administration and programming classes, and HP Professional's *UNIX SYS_ADMIN columnist. He can be reached at* frederm@aol.com.

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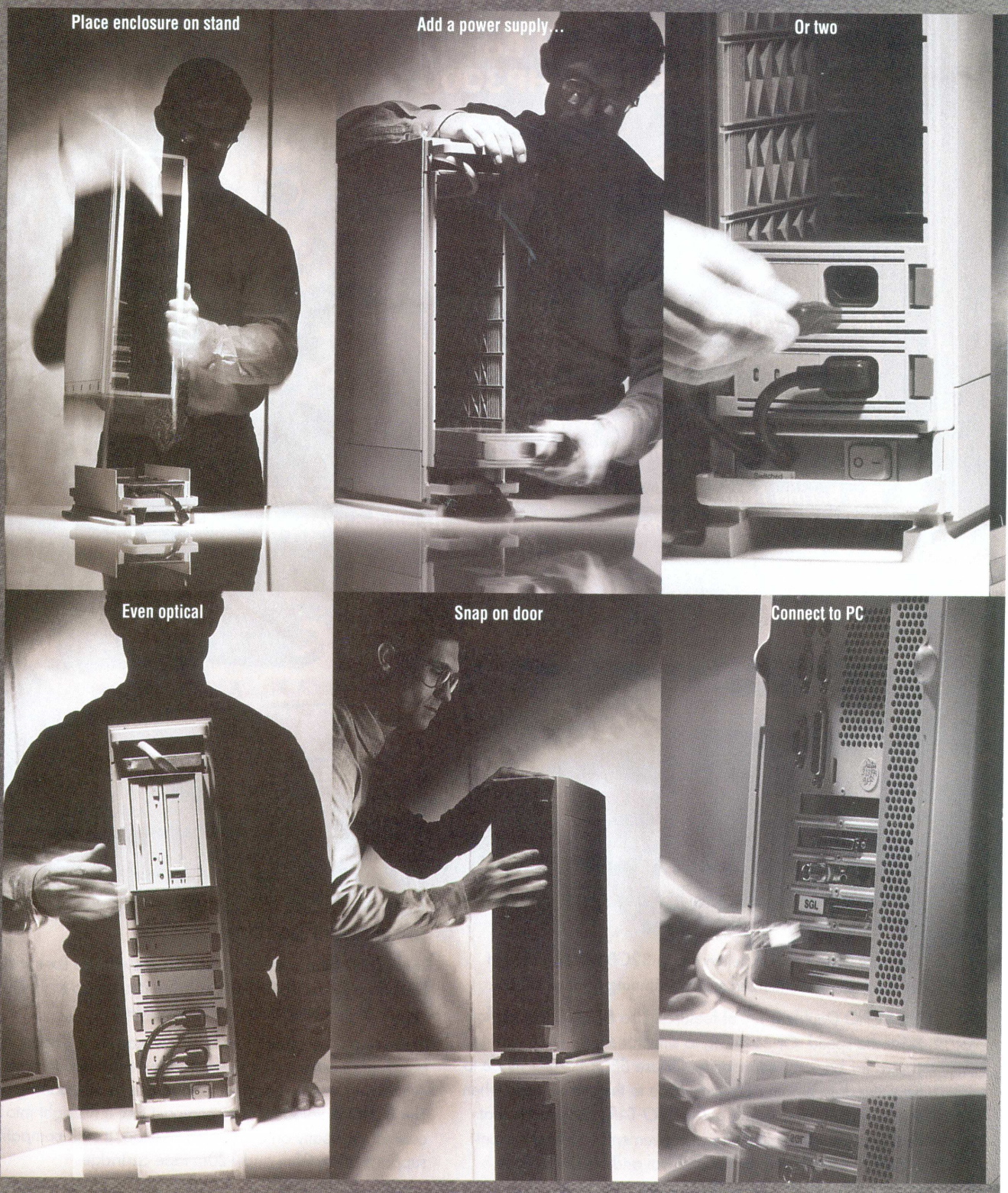

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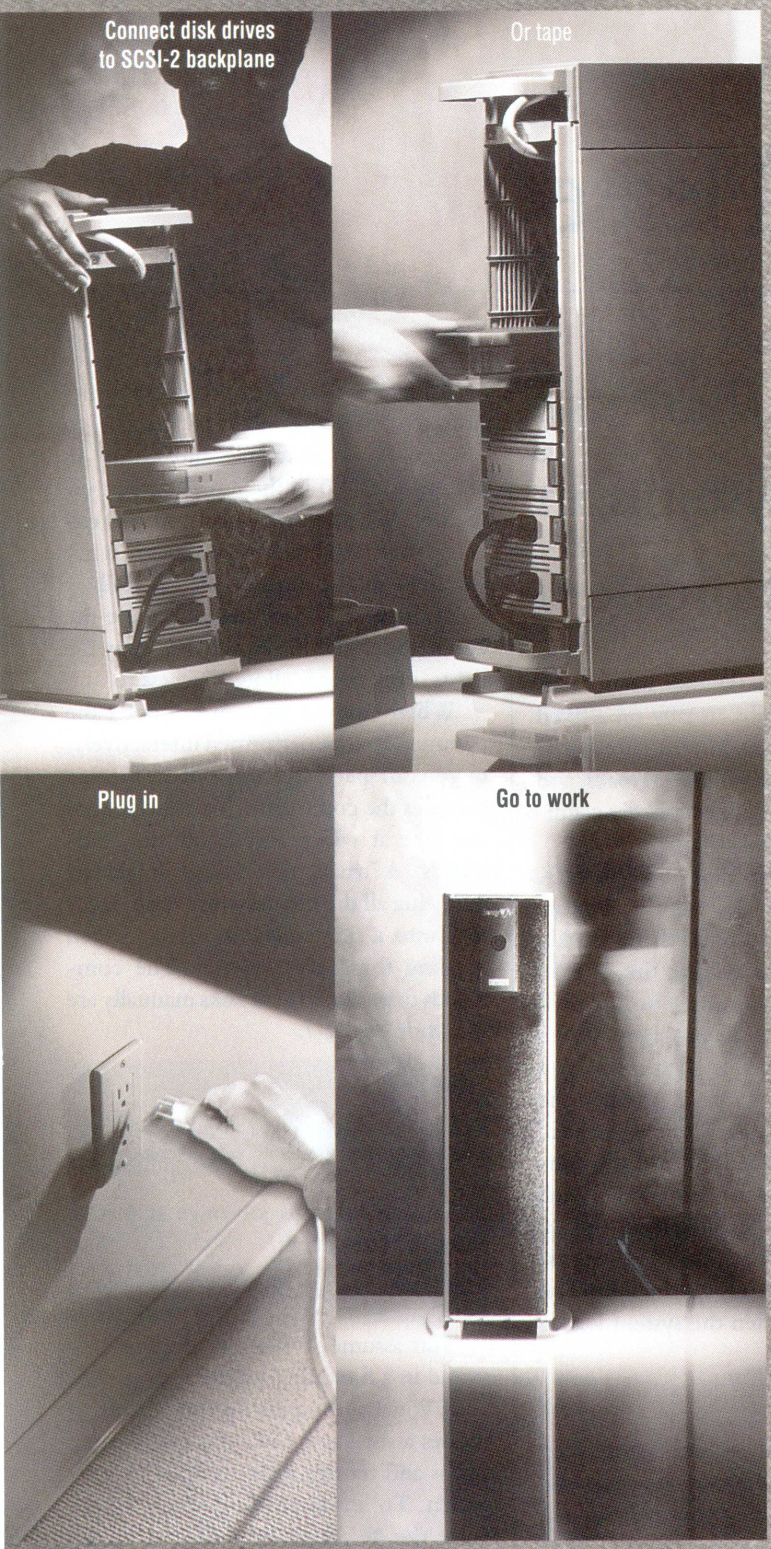

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Miles B. Kehoe

Your ATtention Please

Companies that use computer systems in live production often find a number of tasks that need to be performed repeatedly, usually on a fixed schedule. Operations like nightly backups, database dumps and **batch** loads, and periodic file clean-up are all likely candidates for frequent execution.

In HP-UX, as in most other UNIX environments, users and system administrators can schedule jobs for daily, weekly or monthly execution using the crontab program. But users can also schedule one-time tasks using the **at** program. When you have a program or shell script you want to run at a given time, or when the system load is light, use the **at** command.

As I mentioned earlier, the **at** command lets you schedule a program or shell script to execute at a specific time. In fact, you can even specify a program or script as a **batch** job, which allows the system to perform the job when the system load is light.

AT YOUR DISPOSAL

Before you can use **at**, you need permission. Your system administrator can grant you permission by including your username in the /usr/lib/cron/at.allow text file. When **at** starts, it confirms that your current username is listed in this file, and if it is, the command schedules your job.

An alternate way to provide permission to a large number of users is to remove the at.allow file and create an at.deny file, also in the /usr/lib/cron directory. When at.deny exists, **at** will execute your job as long as your name is not specified in the at.deny file. A null or empty at.deny allows all users to use the command. If neither an allow or deny file exists, only root is allowed access to **at**.

When you run **at**, you can enter the commands to be performed interactively, or you can specify the name of the file that contains the commands. You also specify the time at which to execute the commands. A trivial task for **at** might be archiving all the files in your home directory into a single backup file, and then copying those files to tape. The commands to perform these tasks manually are shown in *Figure 1*.

FIGURE 1

```
tar cvf /users/mbk/backup ./data
dd if=/users/mbk/backup of=/dev/rmt/0l
```

To schedule this job once at 4 p.m. enter the command:

```
at -f scriptfile 16:00
```

This assumes the script in *Figure 1* is stored in a file called scriptfile.

If you have permission to use **at**, it creates a shell script in /usr/spool/cron/atjobs and returns a job number to your screen. To list all pending jobs, you can enter the **at** command followed by the letter "l":

```
at -l
```

The at command lets you schedule a program or shell script to execute at a specific time. You can even specify a program or script as a batch job.

Figure 2 shows a list of the pending jobs.

FIGURE 2

```
at -l
792212400.a     Tue Feb 07 19:00:00 1995
792242300.a     Wed Mar 19 17:45:00 1995
```

To remove a job that you have scheduled, simply use the command:

```
at -r 792212400.a
```

The last parameter is the script file name shown by the example in *Figure 2*.

The script created by the **at** command takes a "snapshot" of your environment and prepends a list of Bourne shell commands, so your scheduled script will run with the current environment. If you do not use the Bourne shell, **at** will warn you when you schedule your job. It's up to you to be sure your commands will execute properly.

Figure 3 shows a typical script created by **at**.

FIGURE 3

```
: at job
export PATH; PATH=.:/home/mbk/bin:/usr/vue/bin:/usr/bin/X11:/bin
export DISPLAY; DISPLAY=hp700:0.0
export SHELL; SHELL=/bin/csh
export HOME; HOME=/home/mbk
export TERM; TERM=hpterm
.....
export PWD; PWD=/home/mbk
# @(#) Revision: 27.1
cd /home/mbk
ulimit 4194303
umask 2
tar cvf /users/mbk/backup ./data
dd if=/users/mbk/backup of=/dev/rmt/0l
```

Note: the first line defines this as an **at** job as opposed to a **batch** job.

YOUR OUTPUT IS IN THE MAIL

The output of your job — both standard output and standard error — are automatically mailed to you when the job runs, although if you redirect the output elsewhere, **at** doesn't send the output via mail. If you want to be notified by mail when your job completes, you can specify a **-m** parameter on the command line:

```
at -f scriptfile -m 16:45
```

SAYING WHEN

Besides being able to specify a particular time of day; you also can use English-like syntax to define the time as well as the frequency. For example, all of the following are valid syntax:

```
at -f doit now
at -f scriptfile midnight
at -f scriptfile 945am next tuesday
at -f scriptfile 1600 tuesday + 2 weeks
```

The last example shows how you can define dates more than a week in the future. You can use the **batch** command in the same way that you use **at**. However, the script file that it creates indicates the script is a **batch** command script rather than an **at** script and the system determines when to run the script based on system load. Thus, none of the time and day features are available.

I hope this gives you a good starting point for learning more about scheduling jobs for later execution. Have fun!

Kehoe's Internet address:
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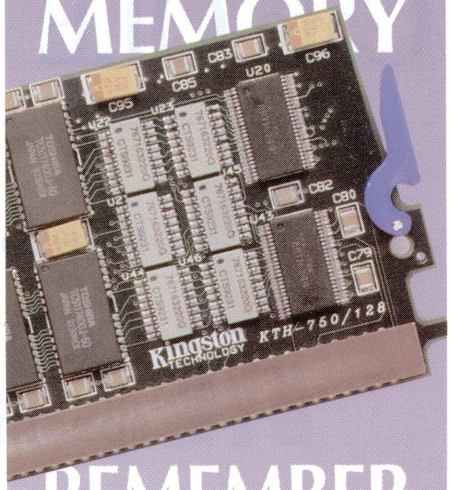

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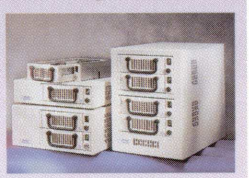

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Gordon McLachlan

Café OLE

Microsoft's Object Linking and Embedding (OLE) 2.0 specification isn't even finished yet, but with over 450 vendors anxiously waiting to sit on any egg Microsoft lays, OLE is already an industry standard to be reckoned with.

An OLE object is simply data provided by an OLE-compliant server application. An OLE server can provide one or more types of OLE objects. For instance, a spreadsheet program might provide a range of cells or a graph as objects. A container application — called the client in OLE 1.0 terminology — can either embed the object or link to it.

An embedded object is a copy of the data provided by the server application, which is stored as part of the container document itself. A linked object is not stored in the container, but as a separate document file. The container stores only enough information to find the source and its server application.

While two parts of the specification — the linking and embedding for which it's named and OLE custom controls (OCXs) — are already being implemented by Microsoft and its legion of followers, OLE still lacks the facilities for distributed objects and integration with the Object Management Group's (OMG) CORBA spec. However, both are hopefully forthcoming over the next year.

If you double-click on an embedded object, its server application will execute right in the container's window. That's a feature known as edit-in-place. Actually, double-clicking may not cause an editing operation at all. For instance, an embedded object could be a control button that causes something else to happen when it is clicked, like playing a sound clip. But in OLE parlance, it's all editing. In contrast, a linked object is edited by running the server application separately in its own window.

Linking allows a container document to be updated automatically whenever the object data is changed by the server application. For instance, a sales report containing data from a spreadsheet could be updated every time the spreadsheet was recalculated. An object also can be linked by more than one application at a time, and can be changed by any of them. Any changes would be reflected in all linked containers when they are fired up.

OLE server applications may support OLE automation. This exposes the properties and methods of OLE objects so they can be programmed directly by their container. OLE automation makes objects available to macro and programming languages, so the OLE objects can be created, manipulated and destroyed without having to invoke the server application itself.

VISUAL BASIC OCX

Although linking and embedding are good when you're using canned applications, OCXs will provide one of the real advantages to object-orientation, the ability to

develop applications from pre-built, reusable components.

OCXs are descended from the Visual Basic Extension (VBX) custom controls used in Visual Basic, and to some degree by Visual C++. Like VBXs, OCXs have properties which define the appearance and behavior of the control, can message their container application whenever a pre-defined event like a mouse press or keystroke occurs and provide methods which can be called directly by the container. Unlike VBXs, which were designed to be used only with Visual Basic and which could not be used by other languages or tools without a lot of problems, OCXs are meant to be used inside a variety of different containers and will support 32-bit Windows applications in Windows 95 and NT. Microsoft already supports OCXs in its Access 2.0 database product, Visual Basic 4.0 and Visual C++ 2.0, and OCXs could conceivably be used in any OLE 2.0 container application.

ANOTHER BRICK IN THE WALL

Where OLE hits the wall is in distributed objects and interoperability with other object management schemes. If a server is not in-process, it has to be messaged using some form of interprocess communications protocol. OLE 2.0 currently uses Microsoft's Local Remote Procedure Call (LRPC) protocol, which is based on a subset of the RPC specification of the Open Software Foundation's (OSF) Distributed Computing Environment (DCE).

But LRPC only works on a single machine. To run across a network, that protocol has to be juiced up. And details of what Microsoft plans to do in that area still weren't available when this article went to press.

The lack of details about how the RPC mechanism is going to work also is delaying efforts to integrate OLE with the OMG's CORBA 2.0 specification, which was approved late last year. Despite Microsoft's attempt to define a Common Object Model (COM) for cross-platform compatibility with DEC and their offer to cobble together an interface between COM and CORBA, the OMG didn't bite. So the OMG is waiting until Microsoft opens the kimono a little more before it issues an RFP for the COM-to-CORBA bridge.

In the end, users can be certain that OLE will live long and prosper, and will be accommodated by several other object architectures. Now, the only question is how long it will take.

McLachlan's Internet address:
mclachlan@cardinal.com

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Miles B. Kehoe

Be A Windows Task Master

When you press CTRL-ESC or double-click on your Windows desktop, Windows launches the Task Manager, which lets you start or end any Windows applications. It also lets you align the icons of minimized applications, and tile or cascade all open Windows. Task Manager is actually a standard Windows program called TASKMAN.EXE located in the Windows directory.

But you'll probably find that you're not using the Task Manager much. If so, you might find it useful to assign a different program to the CTRL-ESC key combination. To swap Task Manager for another program, simply add a line to the SYSTEM.INI control file in your Windows directory. Remember, whenever you edit any important configuration file like SYSTEM.INI, make sure you make or already have a backup copy of the file.

Use the Windows NOTEPAD applet or SYSEDIT to load SYSTEM.INI and locate the [Boot] section. Then add a line anywhere in the [Boot] section that names the file you want to run:

```
TASKMAN.EXE=C:\UTIL\MYPROG.EXE
```

You can omit the full path if the directory of the program is already listed in your PATH statement. Save the changes and exit Windows.

After you re-boot, pressing CTRL-ESC will start the program you named rather than the Task Manager. And you can still use ALT-TAB to toggle through active tasks.

As you edit the SYSTEM.INI file, you may find an existing line redefining TASKMAN.EXE. Some applications, such as the new Microsoft keyboard driver, provide a replacement Task Manager. If you comment out the existing line by placing a semicolon at the beginning of the line, you can add your own new TASKMAN line as above.

If you need to go back to the initial Ttask Manager replacement, delete the semicolon, and delete or comment out the line you added. To use the default TASKMAN.EXE, delete the line that redefines TASKMAN.EXE.

BEWARE OF THE TASKMAN

When Windows starts the Task Manager, it passes the cursor coordinates to the command line. So if your application can accept command line parameters, it may be confused by the coordinates Windows provides. For example, the Windows File Manager WINFILE.EXE complains about bad file names. On the other hand, you can use this information to provide an alternate Task Manager or the standard system Task Manager based on those command parameters.

When you press CTRL-ESC, Windows loads the Task Manager with the coordinates (0,0). When you click on the Windows desktop, however, it passes the coordinates of the mouse pointer at the time of the click. With this information,

you can write a small program that launches the standard TASKMAN.EXE when you press CTRL-ESC; but launches your program when you double-click on the desktop.

OUT TO LAUNCH

First, write a simple Windows application to examine its command line. If the parameters are (0,0), execute TASKMAN.EXE. If the command line is not (0,0), launch the program that you want (MYPROG.EXE).

Figure 1 lists the Visual Basic code for such a program.

Figure 1

```
Launching Utility from Visual Basic 3.0

Sub Form_Load

IF    COMMAND$ = "0 0" then
       winexec("TASKMAN.EXE",1)
ELSE
       winexec("C:\UTIL\MYPROG.EXE",1)
END IF

END
```

Whenever you edit any important configuration file like SYSTEM.INI, make sure you make or already have a backup copy of the file.

You also need to define an external function WINEXEC, which is a standard part of the Windows API:

```
Declare Function WinExec Lib "Kernel"
(ByVal lpCmdLine As String, =>
ByVal nCmdShow As Integer) As Integer
```

Compile the application in *Figure 1* as LAUNCH.EXE and save it in the Windows directory. Edit your SYSTEM.INI file to include the line:

```
TASKMAN.EXE=C:\WINDOWS\LAUNCH.EXE
```

Save the file and exit Windows. After re-starting Windows, LAUNCH.EXE will run whenever you double-click on the desktop or press CTRL-ESC. However, when you press the CTRL-ESC keys, LAUNCH will receive "0, 0" as the command line, so LAUNCH will start the standard Task Manager. Double-clicking will pass a different command line and will launch MYPROG.EXE.

If you find LAUNCH's performance slow, load LAUNCH.EXE whenever you start Windows. You can edit the **load=** line in the WIN.INI file. Or you can create a Program Item icon for LAUNCH.EXE in a Windows Startup group (make sure you mark the "Run Minimized" button). This will cause LAUNCH to run upon startup.

Kehoe's Internet address:
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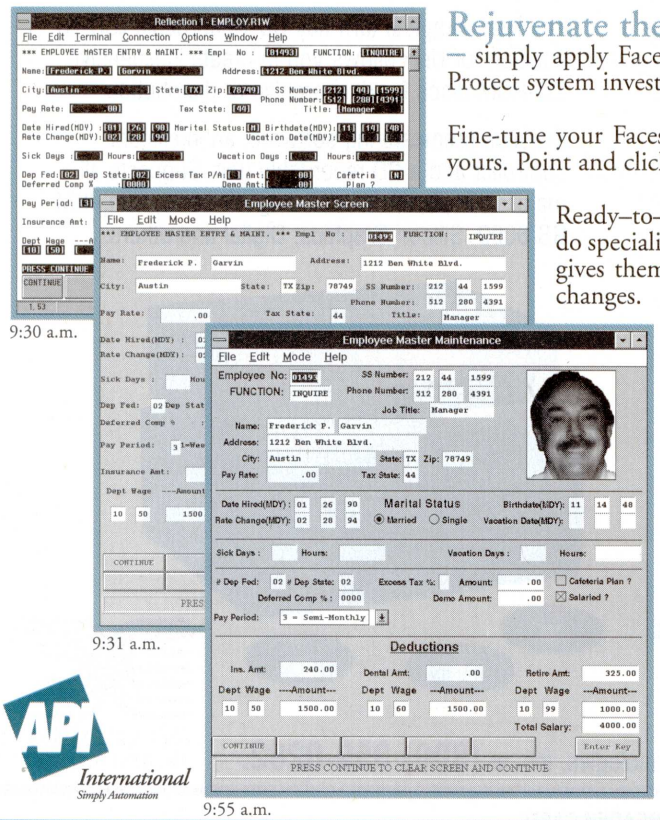

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new Products

SOFTWARE

BWI Delivers PMIS++ Software

Bradley Ward Systems Inc. (BWI) announced the availability of PMIS++ for the HP 9000 Series computer under the HP-UX operating system. PMIS++ is a client-server-based information management system that integrates heterogeneous plant-floor devices for real-time data sharing with enterprise-wide systems.

The software provides an object framework layer that enables users to custom configure software applications. Software agents are provided with an automated process control across the entire factory network. PMIS++ incorporates @ a Glance server software to integrate PC workstations into a client-server topology.

Prices range from $15,000 to $60,000, depending on system configuration.
Contact BWI, 750 Hammond Dr., Bldg. 10, Ste. 200, Atlanta, GA 30328; (404) 256-4855.

Circle 400 on reader card

Scopus Technology Releases ContractTEAM

Scopus Technology Inc. released ContractTEAM. The newest module of the ProTEAM customer information management system allows organizations to create, implement and manage a variety of service offerings, including third-party support.

Contract sales and renewals, entitlement verification and service tracking also are available through ContractTEAM.

ContractTEAM supports all ProTEAM platforms, including Sun, HP and IBM

Create CD-ROM Discs on Your Desktop

The first complete turn-key CD-Recordable (CD-R) solution for Unix allows you to create inexpensive CD-ROM discs for data archive or distribution.

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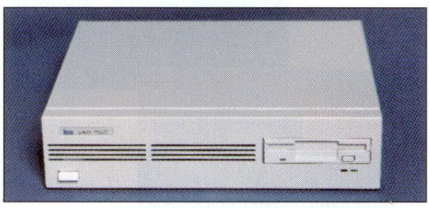
For more information, call Concorde Technologies, Inc. at (800) 359-0282.

CONCORDE TECHNOLOGIES

CIRCLE 232 ON READER CARD

270MB UNIT IS AVAILABLE FOR HP9153 REPLACEMENT

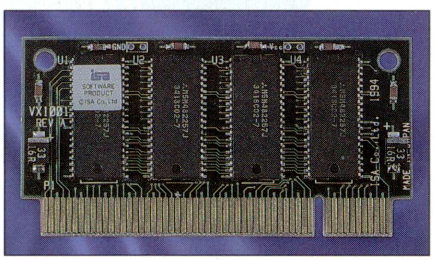
ISA announced the addition of a new 270 MB unit to its family of HP9153 replacement Hard Drives with Floppy. ISA has been supplying 46MB and 118 MB units in the market for more than 10 years, and this release would give more choice to the users. Price is $2,220.00. Contact Floppy Disk Family Dept. 713/493-9925. **CIRCLE 403 ON READER CARD**



INTRODUCTORY PRICING FOR HP712 MEMORY BOARDS

ISA newly relaesed memory cards for HP712. The introductory pricing offers $1,100.00 for a 32MB kit, and $2,200.00 for a 64 MB kit. Call 713/493-9925.

CIRCLE 401 ON READER CARD



MULTIFUNCTION 4MM SUB-SYSTEM

Texas ISA, Inc. introduced a new 32GB Multifunction 4MM Sub-System at Interex '94 in Denver, Colorado. Two models are available: 5032S-Dual for DDS-I and 5034S-Dual for DDS-II. The unit features: off-line tape-to-tape copy, verify, mirroring, cascading, and alternating drives. Supports HP, SUN, IBM and DEC. Contact John Larmie; 713/493-5746. **CIRCLE 402 ON READER CARD**

ISA NEW POWER MANAGEMENT SOLUTIONS

ISA and Mitsubishi Electric developed a new intelligent UPS (Uninterruptible Power Supply) system combined with ISA's well-known Model 7020, or 7030 Auto Shut-Down unit. The system features: Simplified shutdown process initiation, Timer operation, Network, Remote Control, Digital and analog sensor inputs. Multi-Platform support (HP, Sun, IBM, DEC, SGI, etc.) 1, 2, 3KVA models are available. **CIRCLE 404 ON READER CARD**

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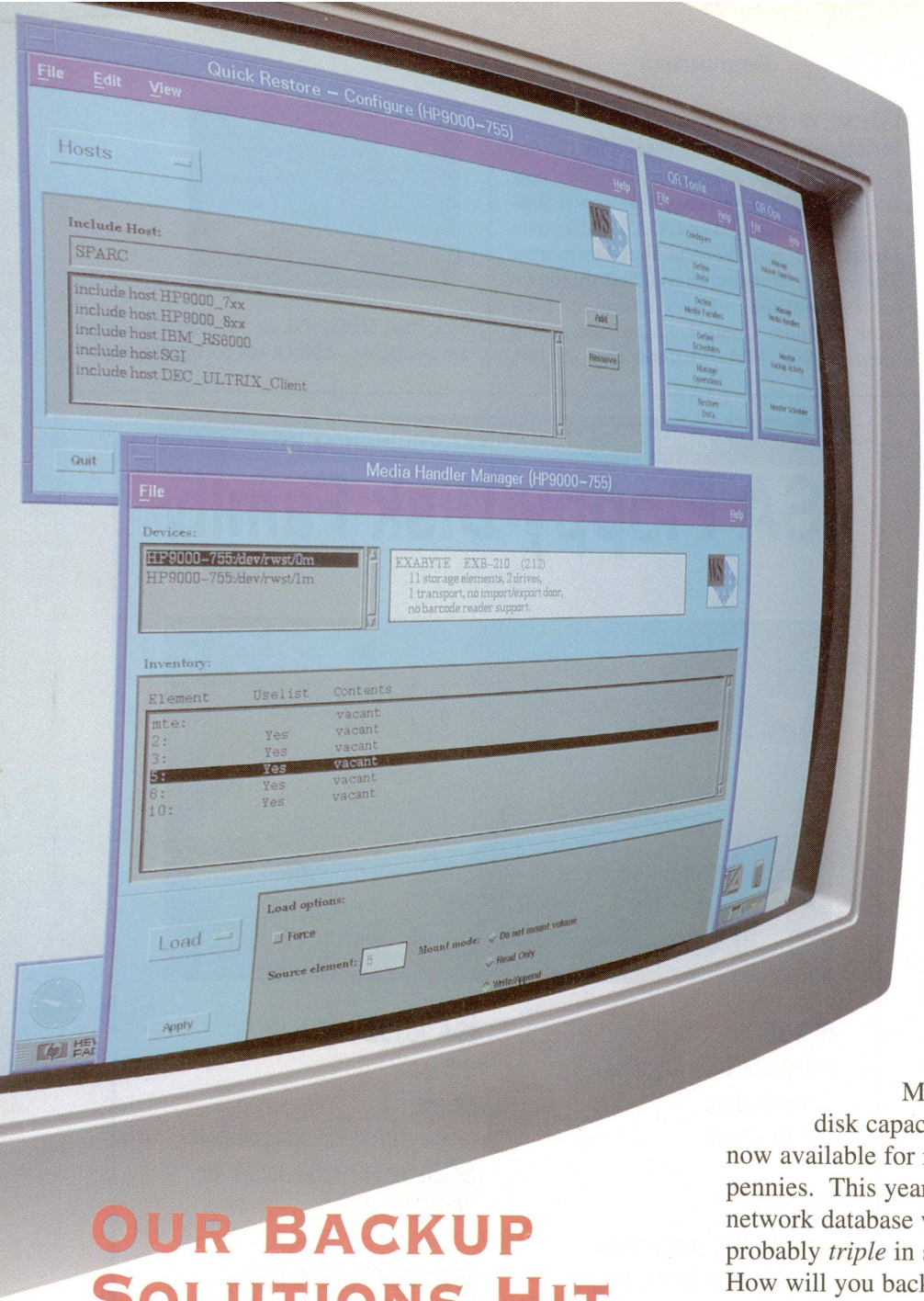

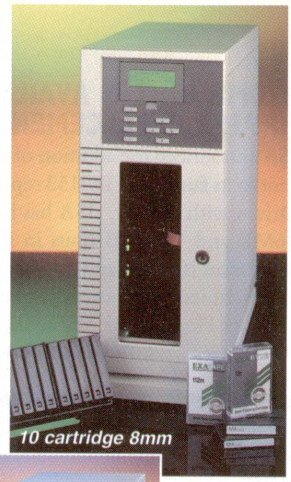

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Reader Information

This month's issue contains many advertisements for hardware and software products available for your HP systems. Your investment in these products today could mean a more lucrative future for your company. Use the information below to learn more about the advertisers' offerings, then use the reader information card to initiate your direct link to valuable information about these advertisers' products.

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IEM, INC.
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IEM offers affordable solutions for the HP environment, including 4mm and 8mm tape drives, autofeeders and carousels, QIC tape drives, optical drives (WORM, Multifunction and CD-ROM), fixed Winchester drives, floppy disk drives and combination drives. Most IEM products are available with an HP-IB or SCSI interface for HP 1000, 3000 and 9000 computers. IEM offers software solutions, including automated backup and archiving.
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Kingston Technology designs and manufactures memory upgrades for PCs, laptops, workstations and laser printers. The Kingston product line also features mass storage subsystems and processor upgrades.
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MINISOFT INC.
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Minisoft 92 for DOS and Windows providing HP terminal emulation and LAN connectivity for just $129.
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Omtool's Fax Sr. is the versatile network fax software based on client/server architecture. Clients are available for Windows, DOS, Macintosh, Windows NT and Motif with server options including Windows NT and HP-UX.
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TEXAS ISA INC.
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UNIX workstations, Windows NT PCs as servers, and Windows, Macintosh, Motif and X terminal clients.

ContractTEAM is sold on a per concurrent user basis. An implementation for 10 users on a single server would cost $50,000, depending on configuration.

Contact Scopus Technology Inc., 1900 Powell St., Emeryville, CA 94608; (510) 428-0500.

Circle 399 on reader card

BBN Announces GUI Toolkit

BBN Software Products released the Graphical User Interface (GUI) Toolkit for building custom interfaces for BBN/Probe time-series, data analysis and visualization software.

The GUI Toolkit includes a derivative of Visual Edge Software Ltd.'s UIM/X product that contains full functionality of the GUI builder for X-windows Motif UNIX systems. It also consists of a run-time version of BBN/Probe integrated with the UIM/X Builder Engine and a library of communication protocols to facilitate the exchange of information between the user-written GUI application code and the BBN/Probe.

The software provides users with an interactive environment for performing analysis and for creating graphics to view the results.

The BBN/Probe GUI Toolkit runs on Sun running SunOS 4.1 with others to follow. Prices range from $5,000 to $15,000 for various packages.

Contact BBN Systems and Technologies, 10 Moulton St., Cambridge, MA. 02138; (617) 873-3000.

Circle 397 on reader card

Netmail/3000 Opens Internet Interface

3k Associates released a new point-and-shoot interface to Netmail/3000, its Internet-compliant E-mail system for HP 3000 business systems.

The software serves large and small corporations that use HP 3000s. A user needs only an HP standard LAN card and a commonplace LANLink HP networking software to make the connections.

Netmail/3000 can be used alongside non-HP E-mail systems, easily passing messages from other SMTP-compliant systems on UNIX servers.

Contact 3k Associates, P.O. Box 5812, Springfield, VA 22150; (703) 569-9189.

Circle 396 on reader card

Imageware Releases Surfacer Version 4.0

Imageware Inc. announced Surfacer version 4.0, an icon-based interface with tools for point-processing, geometry creation and verification that will benefit engineers and designers.

Surfacer Version 4.0 has full capabilities on IBM, Sun, Silicon Graphics and HP workstations, and Microsoft Windows PCs.

Included in the new software is an optional module, the Surfacer Rapid Prototyping Module. This allows users to see their data files and to verify the integrity of the model, while checking for error conditions.

Contact Imageware, 313 N. First St., Ann Arbor, MI 48103; (313) 994-7300.

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Adager Guarantees IMAGE/SQL Database Structure

Adager announces a new version of its Adager database utility for HP 3000s which gives HP sites the first guarantee of IMAGE/SQL database structure consistency when transforming an attached database.

Adager automatically maintains the Third Party Indexing (TPI) files used by Omnidex or Superdex when administrators rename or copy databases, or perform detail dataset repacking. It tells the administrator if a database is enabled for TPI and shows which indexing product is used and on which datasets. It automatically invokes the TPIMAINT procedure to re-index the affected datasets.

Adager provides full support for the Detail Dataset Dynamic Expansion (DDX) under MPE/iX 5.0.

Improved algorithms and technology speed up detail and master dataset capacity changes in the new release. Enhancements include: greater resiliency to the operating environment during a database transformation; improvements to the "Redefine Item," "Change Item" and "Change Field" functions; additional information in the "Report" functions; and increased cross-checking during the "Consistency Check" phase of every Adager run.

Contact Adager, The Adager Way, Sun Valley, ID 83353; (208) 726-9100.

Circle 394 on reader card

Uniplex Announces V8 Of Its Business Software

Uniplex Software Inc. announced the availability of Uniplex Business Software version 8. Version 8 is the latest release of Uniplex' integrated office suite for UNIX systems.

New features include improved E-mail, an Informix database engine, additional database links and optional migration paths to Uniplex' onGO Office client-server-based messaging backbone.

Uniplex Business Software version 8 includes a copy of the Informix version 5 standard engine, as well as optional links to Ingres, Oracle and other Informix databases including Informix On-Line.

Uniplex II Plus (BASE) features essential office productivity tools including word processing, spreadsheet, relational database, screen building, business graphics and file management applications. Uniplex Advanced Office System (AOS) is the companion package to Uniplex II Plus. It provides groupware applications such as E-mail, calendaring and scheduling, card index, personal organizer and report writer. Uniplex Advanced Graphics System (AGS), an add-on package to Uniplex II Plus, provides presentation graphics and editing applications. Uniplex Datalink is a powerful add-on integrated package to Uniplex II Plus which allows third-party relational database management systems (Oracle, Ingres) to transparently and automatically exchange data with Uniplex applications. Uniplex Windows is a GUI to Uniplex Business Software, providing support for X Windows-based terminals and workstations.

Uniplex Business Software version 8 is available for HP 9000, IBM RS/6000, SCO UNIX/ODT, Data General AViiON and Sequent/Unisys (PTX) UNIX platforms in character-based and X Windows environments. Price is $100 to $500 per user, depending on the applications needed and number of users.

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LAN Magazine 1994 Connectivity Product of the Year

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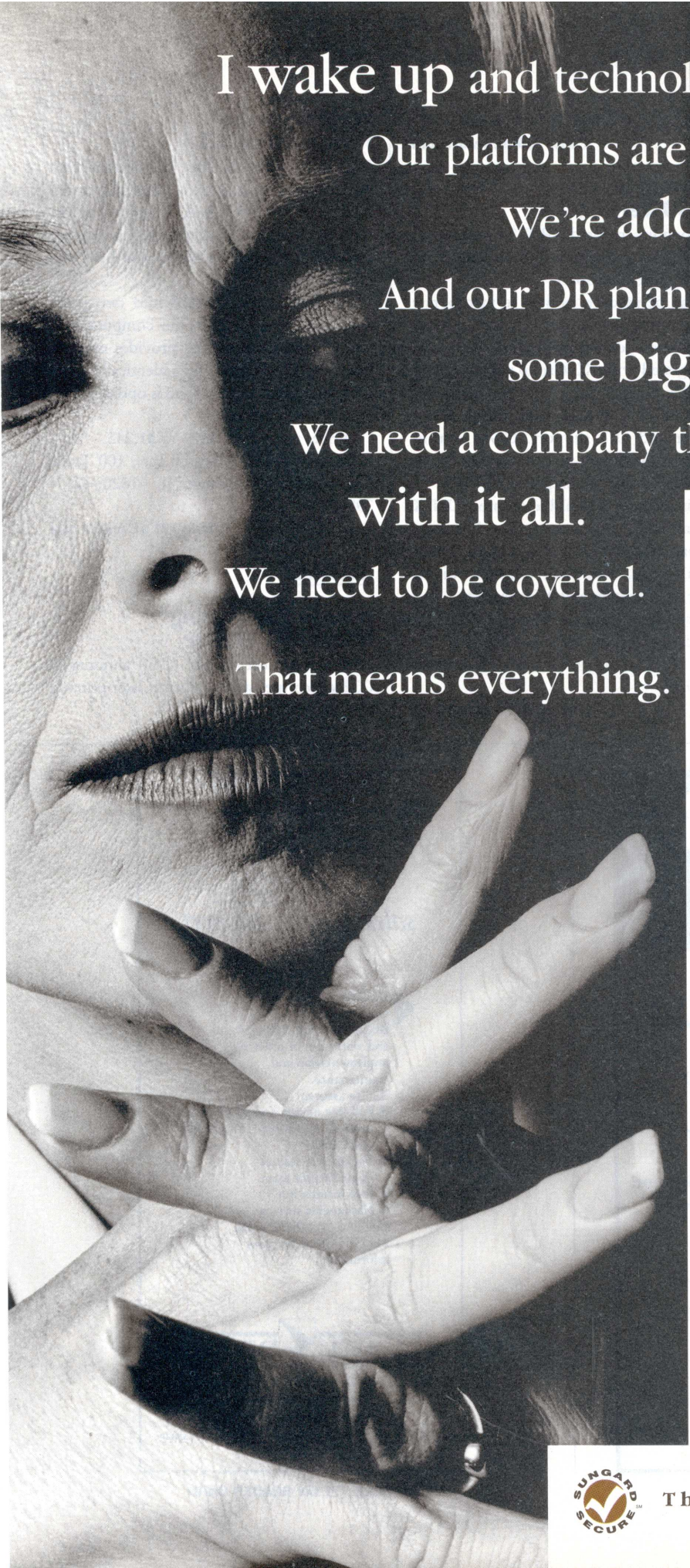

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Contact Uniplex, 600 E. Las Colinas Blvd., Ste. 1400, Irving, TX 75039; (214) 556-0106.

Circle 393 on reader card

NIS Offers ACCENT GraphicVUE

National Information Systems Inc. (NIS) announced the availability of the ACCENT GraphicVUE Project Management System 1.60. This software is a critical path method project scheduling and resource leveling system with mouse-driven Gantt and PERT (Network Diagram charts).

With its GUI, ACCENT GraphicVUE allows an activity to be moved and its detail data viewed while in either the Gantt chart or project network display mode.

Accent GraphicVUE is available on Sun Microsystems workstations running SunOS 4.1.x (Solaris 1.0) and Solaris 2.3 or greater (SPARC and x86), HP 9000/700 workstations running HP-UX version 9.0 or greater and Silicon Graphics workstations running IRIX 4.0.1 or greater.

Prices start at $995.

Contact NIS Inc., 4040 Moorpark Ave., Ste. 200, San Jose, CA 95117; (408) 985-7100.

Circle 389 on reader card

KL Group Releases XRT/3D Version 2.1

KL Group Inc. released XRT/3d version 2.1, a surface, bar and contour graph widget for X application developers.

It can be used on its own to incorporate 3D charts and graphs into a wide range of financial and scientific applications. It also can be integrated with KL Group's XRT/graph and XRT/table.

XRT/3d 2.1 also includes a C++ wrapper and UIL support. CGM output which was previously an extra-cost option is now bundled free of charge.

This software is available on most UNIX platforms and can be integrated with Builder Xcessory, db-UIM/X, HP-Architect, IBM-AIC, iXBuild, TeleUSE, UIM/X, ViewCenter, X-Designer and XFaceMaker.

Prices range from $2,495 to $9,995.

Contact KL Group Inc., 260 King St. E., Third Fl., Toronto, ON M5A 1K3; (416) 594-1026.

Circle 390 on reader card

Wolfram Ships Mathematica 2.2

Wolfram Research Inc. announced that Mathematica 2.2 is now shipping under NextStep for HP PA-RISC-based workstations. Versions of Mathematica also are available for Motorola 680x0 and Intel 486 platforms.

Mathematica is divided into two parts. The kernel which does the computations, and the front end, which provides user the interface. The kernel works identically on all computers, but the front end is optimized for specific computers.

Prices range from $995 to $1,245.

Contact Wolfram Research Inc., 100 Trade Center Dr., Champaign, IL 61820; (217) 398-0700.

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HARDWARE

Ganson Engineering Offers G32 Printer

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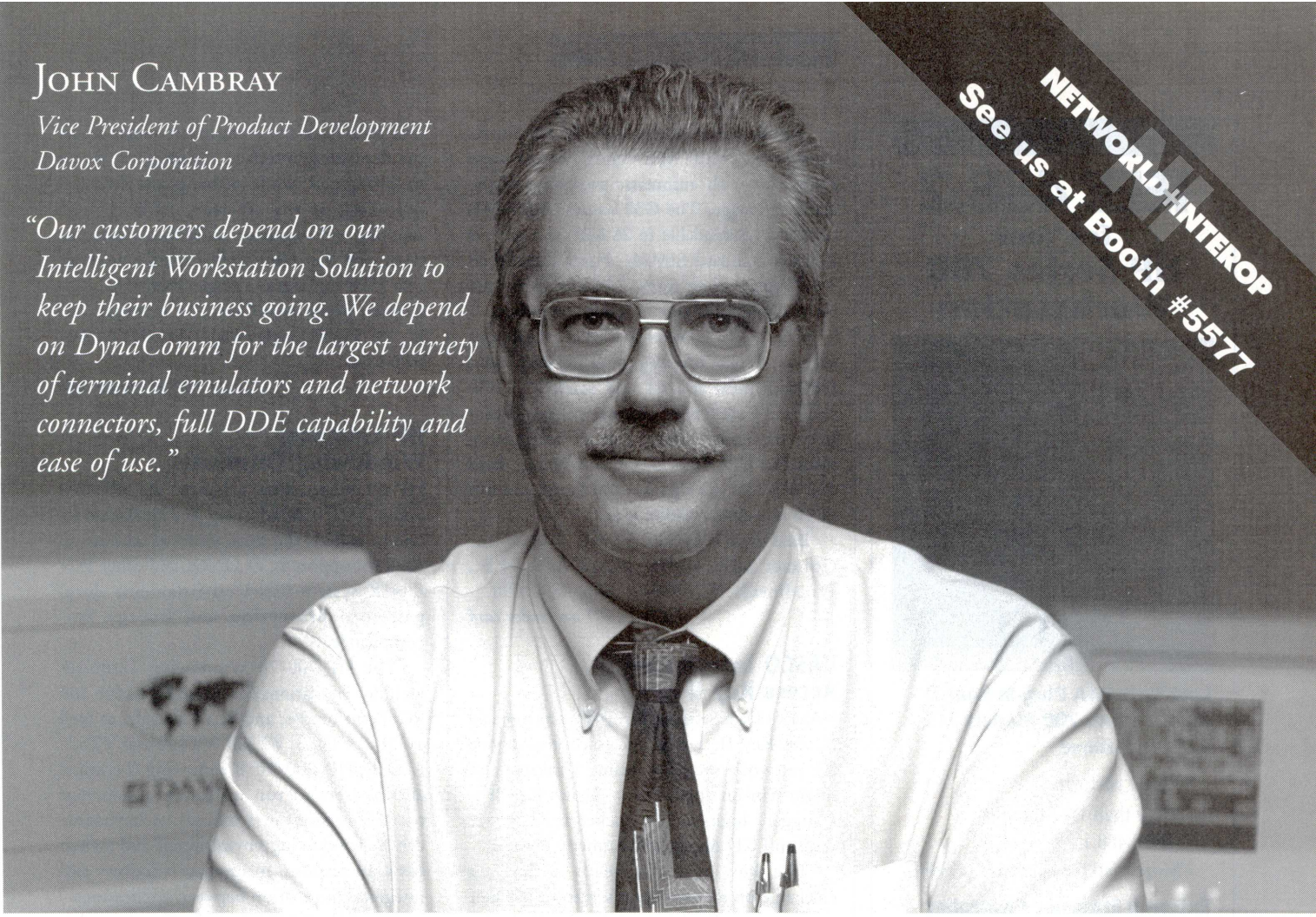

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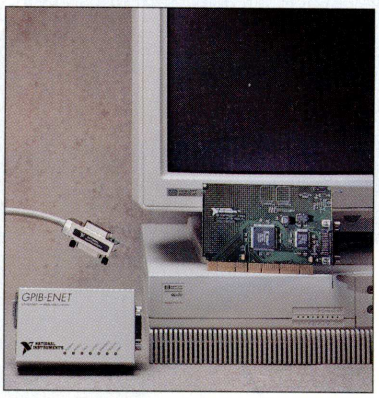

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CIRCLE 244 ON READER CARD

Standard features include: PCL5 printer emulation and Microsoft TrueImage PostScript with automatic switching of the active language. The G32 comes with 8 MB of RAM (expandable to 28 MB) and accepts industry-standard SIMMs. Fonts include 35 TrueType outline fonts, 14 Laser II and III bit-mapped fonts and 13 scalable typefaces.

It is available with a variety of options such as: duplex printing, high capacity input feeder (2,000 sheets) and stacker (1,800 sheets), PostScript compatibility, direct network connectivity for all computing platforms (HP, IBM, DEC and Wang), hard disk drive for storing fonts and forms, and five or 10 bin sorter/stacker unit.

Base price is $9,950.

Contact GEI, 18678 142nd Ave. N.E., Woodinville, WA 98072; (206) 489-2090.

Circle 387 on reader card

VASCO Introduces Access Key II

VASCO Data Security Inc. (VDS) introduced Access Key II, a new access control device for network security, home banking and single sign-on applications. Access Key II is a rugged, high-quality pocket-sized device with an LCD display and numeric keypad.

The key optically reads a flashing challenge on the computer screen or the user may enter, via the numeric keypad, the challenge code displayed on the screen. In either case, Access Key II generates a unique password with each use, making password protection easier and more secure.

Contact VDS, 1919 S. Highland Ave., Ste. 118-C, Lombard, IL 60148; (708) 932-8844.

Circle 385 on reader card

South Seas Corp. Announces FOX

South Seas Corp. announced the signing of marketing agreement with CompuLynx Inc. for their Fiber Optic SCSI Extender (FOX).

The FOX enables a high-speed connection between Unisys, UNIX or IBM systems and their SCSI peripherals. Two FOX interface units are used in each system (one for each side of the link), and are connected using industry-standard duplex fiber-optic cable terminated with "ST" connectors. The FOX system enables data processing centers to distance their SCSI peripherals up to 3 Km while maintaining a 5 MBps transfer rate.

It supports SCSI I and II, asynchronous transfers, and disconnect and reconnect functions. FOX also ensures data reliability by performing a bit-for-bit check on every transfer in real time. FOX provides a real-time loop back and comparison of data across the fiber-optic interface, creating no impact to throughput, while enabling detection and reporting of any transfer errors. It also supports multi-initiator/multifiber configurations with the ability to multiplex more than one SCSI bus across a single fiber.

Contact South Seas Corp., 14 Inverness Dr. E., Ste. F 228, Englewood, CO 80112; (303) 649-1944.

Circle 383 on reader card

HP Enhances Windowing Terminals

HP announced it has enhanced the HP 9000 Series 700/70 Windowing Terminal product line to include the main terminal emulations need to support SCO UNIX and other PC-UNIX system-based environments, local password protection and Energy Star compliance.

The HP 700/70 Windowing Terminals includes emulations for Wyse 60 native and PC Term modes, and SCO console, as well as DEC VT320, VT220, VT100 and VT52.

The HP 700/70 Windowing Terminal allows users to run up to six concurrent terminal sessions in a mouse- or keyboard-driven windowing environment and switch between sessions, manipulate windows and integrate information between applications.

The HP 700/70 includes firmware that complies with the Display Industry Associations "AlphaWindow" terminal standard and a license for Structured Software Solutions Inc.'s FacetTerm window management software for UNIX system-based environments. It supports HP, IBM, Sun, DEC, SCO and other Intel SVR4 UNIX system-based platforms.

The HP 700/70, including keyboard is $529. An MPR-II-compliant version is $559. Media kits, which are required on a one-per-site basis, are $99. An optional mouse is $30, and the Model 700/60 to 700/70 upgrade kit is $69.

Sparcom Offers HP Palmtop Connectivity Solution

Sparcom Corp. announced that Station, PrintStation and MailStation are now fully compatible with HP's 100LX and 200LX palmtop computers.

Each docking station includes required software, cables and an AC adapter to provide operating power to a docked palmtop, which adds life to the battery.

The SmartDock HP 100/200LX Station has an optional PC DataExchange, palmtop connectivity software for Windows/DOS operating systems.

You Might Be Surprised By What Some Financial Management Software Vendors Mean By Client/Server Architecture.

Before you invest in accounting software that promises client/server functionality, you better be sure it isn't based on a makeshift architecture.

While most software vendors claim they have "true" client/server systems, you may be surprised to find many who simply patch front-end gadgets onto their existing accounting software and label them "client/server." The fact is that these imitation client/server systems were not designed with the flexibility to meet the diverse needs of your users or to access real-time financial information without being hindered by performance issues.

At Mitchell Humphrey & Co., there are no surprises. Our latest release, FMS II, was designed from the ground up with flexible client/server implementation and high performance as primary goals. You can choose where and how the processing will take place and still be confident FMS II will provide consistently powerful functionality.

The object-oriented design and layered architecture of FMS II is portable across the HP 3000 and HP 9000 platforms, as well as a wide variety of data bases, networks and graphical user interfaces. Furthermore, FMS II has tools for customizing screens, menus, function keys and forms, along with powerful scripting features for automating repetitive tasks.

So, if you are looking for financial management software that has no surprises, contact Mitchell Humphrey & Co. at (800) 237-0028.

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The PrintStation connects the HP palmtop to a parallel printer and desktop PC. The MailStation operates the same as the PrintStation, but it connects to E-mail and bulletin board services. Both include PC DataExchange.

The SmartDock HP 100/200LX Station costs $79.95 without software and $99.95 with software. The SmartDock HP 100/200LX PrintStation costs $199.95. The SmartDock HP 100/200LX Mail Station costs $289.95.

Contact Sparcom Corp., 897 N.W. Grant Ave., Corvallis, OR 97330; (503) 757-8416.

Circle 380 on reader card

Artecon Protects LynxRAID With RAID Controller

Artecon announced the expansion of their LynxRAID line with a loadshare/failover solution that uses an optional standby RAID controller. This option assumes responsibility for all RAID operations if the primary controller fails.

If a failure occurs, the completion of the command-in-progress is guaranteed because of the two controllers and the loadshare/failover boards. Subsequent commands will be handled, without interruption, by the standby controller.

The LynxRAID controller unit supports up to two RAID controllers. Used separately, each controller can support over 116 GB of storage at RAID levels 0, 3 or 5. Using both with the LynxRAID load sharing circuitry, the user has up to a 116 GB fault tolerant RAID solution down to the controller level.

Prices start at $19,995.

Contact Artecon, P.O. Box 9000, Carlsbad, CA 92018; (619) 931-5500.

Circle 379 on reader card

Superior Electric Offers SL Series STABILINE

Superior Electric announced SL Series STABILINE UPSs that regulate voltage, protect equipment from noise and provide battery backup in case of a power failure. This system can be used with every type of mission-critical, voltage-sensitive electronic equipment.

The 12 models have power ratings between 400 to 2200 VA. They permit user selectable 110, 120 or 127 VAC and 60 Hz operation.

Features of this system include bidirectional surge diverting/filtering circuitry, tight output regulation and control over low or high input voltage conditions.

Prices start at $395.

Contact Superior Electric, 383 Middle St., Bristol, CT 06010; (203) 585-4500.

Circle 378 on reader card

XCd Announces XConnect II Lite

XCd Corp. announced XConnect II Lite, a compact multiprotocol Ethernet print server solution for UNIX TCP/IP, Novell NetWare, Windows NT/NTAS and LAN Servers.

It allows users to share printers on an Ethernet network by using a variety of network protocols. Optional software support also is available for both Microsoft LAN Manager and Banyan VINES networks.

The XConnect II Lite has a serial port that can be used for connecting an RS-232 compatible printer or for configuring the print server via a console terminal. Flash memory capability allows firmware updates to be easily downloaded from any host. Price is $325.

Contact XCd Inc., 3002 Dow Ave., Tustin, CA 92680; (714) 476-7855.

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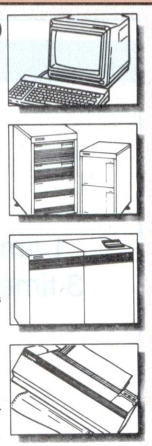

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The Big Sell

HP's Distribution Channel Rallies Like Amway, Avon And Mary Kay

Gordon McLachlan

In the face of pricing pressure and eroding margins on hardware, HP has been busily re-inventing its distribution channel. For most of us in smaller unFortune-ate 500 companies that means we aren't going to see an official HP sales rep again — unless *you* buy *them* lunch.

I appreciate HP's dilemma. I'm sure they'd like to have personal face-time with customers, but that costs money. Too much money, unless you're ready to drop a few million on gear. So, if all you want is a few workstations, you're stuck in the reseller channel.

I first realized there was trouble when my client's HP rep fell off a mountain while skiing and busted himself up a bit. While he was down, he was sort of replaced by another rep. When she called me, I assumed she wanted to talk about my network project and the 25 to 30 UNIX servers that HP had an opportunity to sell us. Foolish me. No, she wanted to discuss my becoming an Amway distributor. I'm not kidding, she actually wanted me to sell soap and rug shampoo for Amway. No thanks.

Later, I received a call from a guy who came on as the friend of a former associate. He asked me what I knew about something called "Interactive Distribution" from an outfit called Internet Services Corp. I've been working in and around manufacturing systems for years, so I just assumed he was talking about some new software package. Suckerrrr. He also wanted to make me an Amway distributor. Turns out Internet Services is a front company that provides marketing literature and motivational tapes for its approach to selling and recruiting for Amway.

But that's when it hit me. Why doesn't HP sell computers the way Amway sells soap and distributorships? HP's distribution setup is starting to look more and more like multilevel marketing anyhow. HP sells to distributor, distributor sells to reseller and reseller sells to user. If you need technical support, reverse the process: user calls reseller, reseller calls distributor and the distributor calls HP. Why not just add another layer or two and go for it?

I can hear you scoffing. Maybe you're wondering if I've really lost it this time. However, I think this is an A-1, top-notch marketing strategy.

But don't HP sales reps have to be specially qualified, you ask. Nah. If I can read a book to learn how to read an HP configuration guide, take a cheesy little test and become an official HP-certified workstation sales consultant — anyone can. So skill and exclusivity isn't the issue.

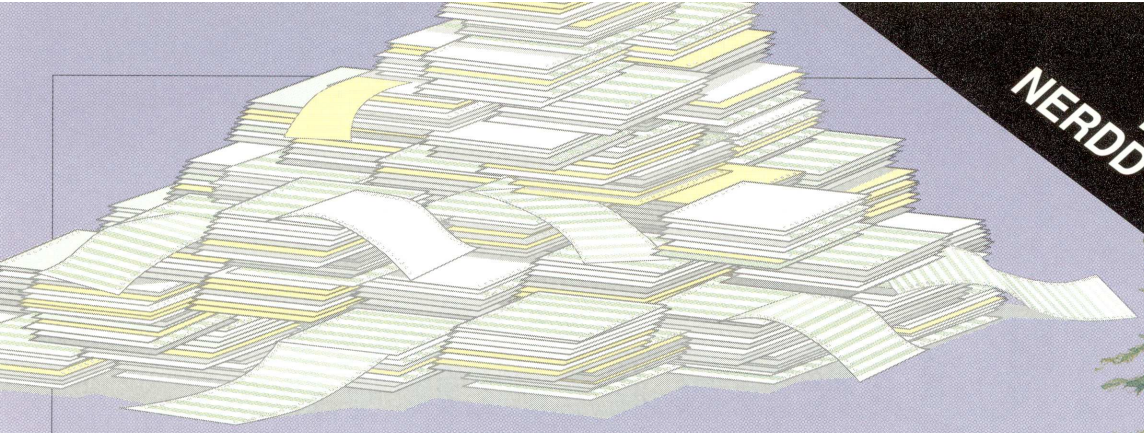
What's in it for HP? Well, the benefits are enormous. They could immediately lay off their entire sales force and replace them with independent distributors. This shouldn't be too much of a problem if you just show the people what a great ground-floor opportunity they have here. Have a couple of rallies with Dan Quayle, sell 'em some manuals and motivational tapes, and turn 'em loose.

For a little revenue enhancement, HP could sell their marketing literature instead of giving it away free. If you look in the trunk of any Amway distributor, you're more likely to find stacks of literature and motivational tapes than product. I haven't seen a bottle of Amway's LOC cleaner in years, but I probably have 10 pounds of literature and a half-dozen tapes lying around somewhere. Think of two million HP distributors, their trunks overflowing with paid-for HP 9000 literature. That's pure profit.

The benefits to customers of this multilevel marketing approach would be just as great. Having trouble getting hold of an HP salesman? Well, I've never heard of anyone having trouble finding an Amway distributor. Want a good discount? No more cajoling, bluffing, weaseling and threatening to get a lousy 15 percent discount. All you have to do is sign up as a distributor and get 25 percent right off the top, plus bonuses for recruiting other distributors.

And that would really help move the boxes. What if, instead of selling a customer an HP box, you get them to be an HP distributor? When it comes time to buy another computer, what do you think they'll buy? No evaluation time and no quibbling over price. Just call the 800 number an get on it. And when their friends want to buy computers ... well, you get the idea.

McLachlan's Internet address:
mclachlan@cardinal.com



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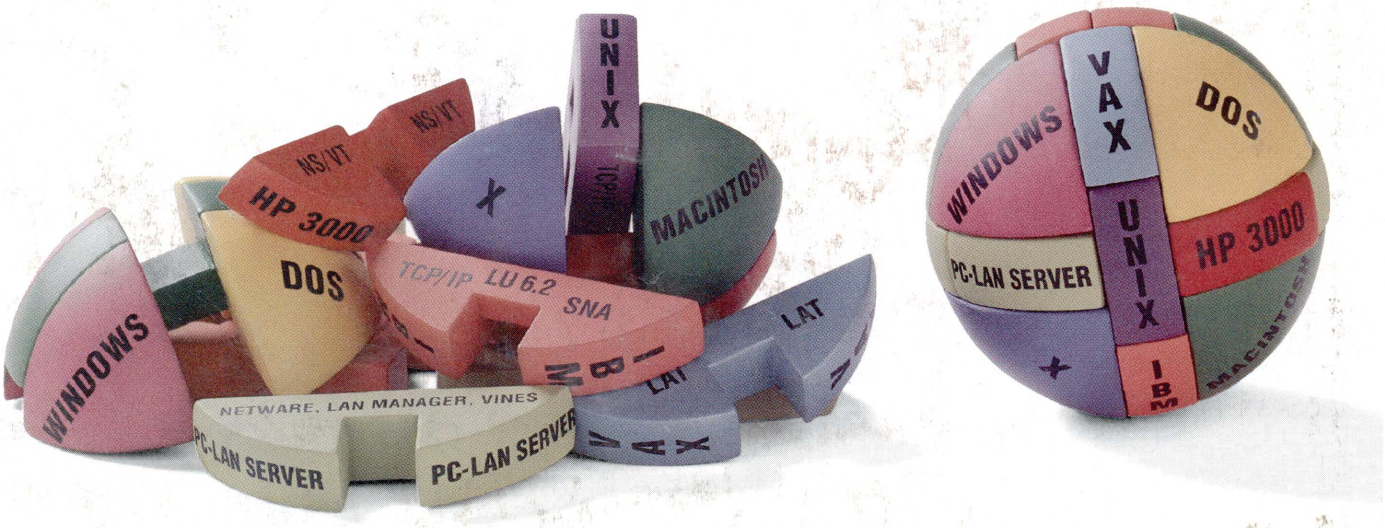

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